



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

# REQUEST FOR PROPOSALS

**Item Description:** INTERIOR RENOVATIONS AT THE ROGER WILLIAMS PARK NATURAL HISTORY MUSEUM AND PLANETARIUM

**Procurement/MinuteTraq #:** 43401

**Date to be opened:** 1/29/2024

**Issuing Department:** Department of Parks

## QUESTIONS

- Please direct questions related to the bidding process, how to fill out forms, and how to submit a bid (Pages 1-8) to the Purchasing Department.
  - Email: [purchasing@providenceri.gov](mailto:purchasing@providenceri.gov)
    - Please use the subject line “**Solicitation Question**”
- Please direct questions relative to the Minority and Women’s Business Enterprise Program and the corresponding forms (Pages 9-13) to the MBE/WBE Outreach Director for the City of Providence, Grace Diaz
  - Email: [gdiaz@providenceri.gov](mailto:gdiaz@providenceri.gov)
    - Please use subject line “**MBE WBE Forms**”
- Please direct questions relative to the specifications outlined (beginning on page 14) to the issuing department’s subject matter expert:
  - Name: Brian F. Byrnes
  - Title: Deputy Superintendent
  - Email Address: [bbyrnes@providenceri.gov](mailto:bbyrnes@providenceri.gov)

## Pre-bid Conference

There will be a Non-Mandatory Pre-Bid Conference  
Monday, January 22, 2024, at 9:00 AM

Roger Williams Park Museum of Natural History and Planetarium, 1000 Elmwood Ave., Providence, RI 02905

**Deadline for questions submissions:** January 19, 2024 at 2:00 PM.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**INSTRUCTIONS FOR SUBMISSION**

**Meeting Date: 1/29/2024**

Bids may be submitted up to **2:15 P.M.** on the above meeting date at the **Department of the City Clerk, Room 311, City Hall, 25 Dorrance Street, Providence.** At 2:15 P.M. all bids will be publicly opened and read at the Board of Contract Meeting in Conference Room 305, on the 3<sup>rd</sup> floor of City Hall.

- Bidders must submit **2 copies** of their bid in sealed envelopes or packages labeled with the captioned **Item Description** and the **City Department to which the solicitation and bid are related and must include the company name and address on the envelope as well.** (On page 1).
- If required by the Department, please keep the original bid bond and check in only one of the envelopes.
- Communications to the Board of Contract and Supply that are not competitive sealed bids (i.e. product information/samples) should have **“NOT A BID”** written on the envelope or wrapper.
- Only use form versions and templates included in this solicitation. If you have an old version of a form **do not recycle it for use in this bid.**
- The bid envelope and information relative to the bid must be addressed to:

**Board of Contract and Supply  
Department of the City Clerk – City Hall, Room 311  
25 Dorrance Street  
Providence, RI 02903**

**\*\*PLEASE NOTE:** This bid may include details regarding information that you will need to provide (such as proof of licenses) to the issuing department before the formalization of an award.

*This information is **NOT** requested to be provided in your initial bid by design.*

**All bids submitted to the City Clerk become public record.** Failure to follow instructions could result in information considered private being posted to the city’s Open Meetings Portal and made available as a public record. The City has made a conscious effort to avoid the posting of sensitive information on the City’s Open Meetings Portal, by requesting that such sensitive information be submitted to the issuing department only at their request.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**BID PACKAGE CHECKLIST**

Digital forms are available in the City of Providence Purchasing Department Office or online at <http://www.providenceri.gov/purchasing/how-to-submit-a-bid/>

The bid package **MUST** include the following, in this order:

- Bid Form 1: Bidder's Blank as the cover page/ 1<sup>st</sup> page (*see page 6 of this document*)
- Bid Form 2: Certification of Bidder as 2<sup>nd</sup> page (*see page 7 of this document*)
- Bid Form 3: Certificate Regarding Public Records (*see page 8 of this document*)
- Bid Form 4: Affidavit of City Vendor (*see pages 9 and 10 of this document*)
- Forms from the Minority and Women Business Enterprise Program: Based on Bidder Category. *See forms and instructions enclosed (pages 11-112) or on:*  
<https://www.providenceri.gov/purchasing/minority-women-owned-business-mbewbe-procurement-program/>

**\*Please note: MBE/WBE forms must be completed for EVERY bid submitted and must be inclusive of ALL required signatures. Forms without all required signatures will be considered incomplete.**

- Bidder's Proposal/Packet: Formal response to the specifications outlined in this RFP, including pricing information and details related to the good(s) or service(s) being provided. Please be mindful of formatting responses as requested to ensure clarity.
- Financial Assurance, *if requested* (as indicated on page 5 of this document under "Bid Terms")

**All of the above listed documents are REQUIRED.** (With the exception of financial assurances, which are only required if specified on page 5.)

**\*\*\*Failure to meet specified deadlines, follow specific submission instructions, or enclose all required documents with all applicable signatures will result in disqualification, or in an inability to appropriately evaluate bids.**



**BOARD OF CONTRACT AND SUPPLY**  
CITY OF PROVIDENCE, RHODE ISLAND

**NOTICE TO VENDORS**

1. The Board of Contract and Supply will make the award to the lowest qualified and responsible bidder.
2. In determining the lowest responsible bidder, cash discounts based on preferable payment terms will not be considered.
3. Where prices are the same, the Board of Contract and Supply reserves the right to award to one bidder, or to split the award.
4. No proposal will be accepted if the bid is made in collusion with any other bidder.
5. Bids may be submitted on an “equal in quality” basis. The City reserves the right to decide equality. Bidders must indicate brand or the make being offered and submit detailed specifications if other than brand requested.
6. A bidder who is an out-of-state corporation shall qualify or register to transact business in this State, in accordance with the Rhode Island Business Corporation Act, RIGL Sec. 7-1.2-1401, et seq.
7. The Board of Contract and Supply reserves the right to reject any and all bids.
8. Competing bids may be viewed in person at the Department of the City Clerk, City Hall, Providence, immediately upon the conclusion of the formal Board of Contract and Supply meeting during which the bids were unsealed/opened. Bids may also be accessed electronically on the internet via the City’s [Open Meetings Portal](#).
9. As the City of Providence is exempt from the payment of Federal Excise Taxes and Rhode Island Sales Tax, prices quoted are not to include these taxes.
10. In case of error in the extension of prices quoted, the unit price will govern.
11. The contractor will **NOT** be permitted to: a) assign or underlet the contract, or b) assign either legally or equitably any monies or any claim thereto without the previous written consent of the City Purchasing Director.
12. Delivery dates must be shown in the bid. If no delivery date is specified, it will be assumed that an immediate delivery from stock will be made.
13. A certificate of insurance will normally be required of a successful vendor.
14. For many contracts involving construction, alteration and/or repair work, State law provisions concerning payment of prevailing wage rates apply ([RIGL Sec. 37-13-1 et seq.](#))
15. No goods should be delivered, or work started without a Purchase Order.
16. **Submit 2 copies of the bid to the City Clerk, unless the specification section of this document indicates otherwise.**
17. Bidder must certify that it does not unlawfully discriminate on the basis of race, color, national origin, gender, gender identity or expression, sexual orientation and/or religion in its business and hiring practices and that all of its employees are lawfully employed under all applicable federal, state and local laws, rules and regulations. (See Bid Form 2.)



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**BID TERMS**

1. Financial assurances may be required in order to be a successful bidder for Commodity or Construction and Service contracts. If either of the first two checkboxes below is checked, the specified assurance must accompany a bid, or the bid will not be considered by the Board of Contract and Supply. The third checkbox indicates the lowest responsible bidder will be contacted and required to post a bond to be awarded the contract.
  - a)  A certified check for \$\_\_\_\_\_ must be deposited with the City Clerk as a guarantee that the Contract will be signed and delivered by the bidder.
  - b)  A bid bond in the amount of **five (5)** per centum (%) of the proposed total price, must be deposited with the City Clerk as a guarantee that the contract will be signed and delivered by the bidder; and the amount of such bid bond shall be retained for the use of the City as liquidated damages in case of default. Any person signing a bid bond as an attorney-in-fact shall include with the bid bond an original, or a photocopy or facsimile of an original, power of attorney.
  - c)  A performance and payment bond with a satisfactory surety company will be posted by the bidder in a sum equal to one hundred per centum (100%) of the awarded contract.
  - d)  No financial assurance is necessary for this item.
2. Awards will be made within **nighty (90) days of bid opening**. All bid prices will be considered firm, unless qualified otherwise. Requests for price increases will not be honored.
3. Failure to deliver within the time quoted or failure to meet specifications may result in default in accordance with the general specifications. It is agreed that deliveries and/or completion are subject to strikes, lockouts, accidents, and Acts of God.

**The following entry applies only for COMMODITY BID TERMS:**

4. Payment for partial delivery will not be allowed except when provided for in blanket or term contracts.

**The following entries apply only for CONSTRUCTION AND SERVICE BID TERMS:**

5. Only one shipping charge will be applied in the event of partial deliveries for blanket or term contracts.
6. Prior to commencing performance under the contract, the successful bidder shall attest to compliance with the provisions of the Rhode Island Worker's Compensation Act, [RIGL 28-29-1, et seq.](#) If exempt from compliance, the successful bidder shall submit a sworn Affidavit by a corporate officer to that effect, which shall accompany the signed contract.
7. Prior to commencing performance under the contract, the successful bidder shall, submit a certificate of insurance, in a form and in an amount satisfactory to the City.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**BID FORM 1: Bidders Blank**

1. Bids must meet the attached specifications. Any exceptions or modifications must be noted and fully explained.
2. Bidder's responses must be in ink or typewritten, and all blanks on the bid form should be completed.
3. The price or prices proposed should be stated both in **WRITING** and in **FIGURES**, and any proposal not so stated may be rejected. **Contracts exceeding twelve months must specify annual costs for each year.**
4. Bids **SHOULD BE TOTALED** so that the final cost is clearly stated (unless submitting a unit price bid), however **each item should be priced individually**. Do not group items. Awards may be made on the basis of *total* bid or by *individual items*.
5. All bids **MUST BE SIGNED IN INK.**

**Name of Bidder (Firm or Individual):** \_\_\_\_\_

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

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

Business Phone #: \_\_\_\_\_

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

Agrees to bid on (Write the "Item Description" here): \_\_\_\_\_

If the bidder's company is based in a state *other than Rhode Island*, list name and contact information for a local agent for service of process that *is located within Rhode Island*

Delivery Date (if applicable): \_\_\_\_\_

Name of Surety Company (if applicable): \_\_\_\_\_

Total Amount in Writing\*: \_\_\_\_\_

Total Amount in Figures\*: \_\_\_\_\_

***\*If you are submitting a unit price bid, please insert "Unit Price Bid"***

***Use additional pages if necessary for additional bidding details.***

\_\_\_\_\_  
Signature of Representation

\_\_\_\_\_  
Title



**BOARD OF CONTRACT AND SUPPLY**  
CITY OF PROVIDENCE, RHODE ISLAND

**BID FORM 2: Certification of Bidder**  
(Non-Discrimination/Hiring)

Upon behalf of \_\_\_\_\_ (Firm or Individual Bidding),

I, \_\_\_\_\_ (Name of Person Making Certification),

being its \_\_\_\_\_ (Title or "Self"), hereby certify that:

1. Bidder does not unlawfully discriminate on the basis of race, color, national origin, gender, sexual orientation and/or religion in its business and hiring practices.
2. All of Bidder's employees have been hired in compliance with all applicable federal, state and local laws, rules and regulations.

I affirm by signing below that I am duly authorized on behalf of Bidder, on  
this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Representation

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



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**BID FORM 3: Certificate Regarding Public Records**

Upon behalf of \_\_\_\_\_ (Firm or Individual Bidding),

I, \_\_\_\_\_ (Name of Person Making Certification),

being its \_\_\_\_\_ (Title or "Self"), hereby certify an

understanding that:

1. All bids submitted in response to Requests for Proposals (RFP's) and Requests for Qualification (RFQ's), documents contained within, and the details outlined on those documents become public record upon receipt by the City Clerk's office and opening at the corresponding Board of Contract and Supply (BOCS) meeting.
2. The Purchasing Department and the issuing department for this RFP/RFQ have made a conscious effort to request that sensitive/personal information be submitted directly to the issuing department and only at request if verification of specific details is critical the evaluation of a vendor's bid.
3. The requested supplemental information may be crucial to evaluating bids. Failure to provide such details may result in disqualification, or an inability to appropriately evaluate bids.
4. If sensitive information that has not been requested is enclosed or if a bidder opts to enclose the defined supplemental information prior to the issuing department's request in the bidding packet submitted to the City Clerk, the City of Providence has no obligation to redact those details and bears no liability associated with the information becoming public record.
5. The City of Providence observes a public and transparent bidding process. Information required in the bidding packet may not be submitted directly to the issuing department at the discretion of the bidder in order to protect other information, such as pricing terms, from becoming public. Bidders who make such an attempt will be disqualified.

I affirm by signing below that I am duly authorized on behalf of Bidder, on

this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

\_\_\_\_\_  
Signature of Representation

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





**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**BID FORM 4: Affidavit of City Vendor**

Per our Code of Ordinances [Sec. 21.-28.1 \(e\)](#), this form applies to a) the business, b) any political action committee whose name includes the name of the business, c) all persons holding ten (10) percent or greater equity interest or five thousand dollars (\$5,000.00) or greater cash value interest in the business at any time during the reporting period, d) all executive officers of the business entity, e) any spouse or dependent child of any individual identified in a) though d) above.

Executive officers who are not residents of the state of Rhode Island are exempted from this requirement.

Per [R.I.G.L. § 36-14-2](#), “Business” means a sole proprietorship, partnership, firm, corporation, holding company, joint stock company, receivership, trust, or any other entity recognized in law through which business for profit or not for profit is conducted.

Name of the person making this affidavit: \_\_\_\_\_

Position in the “Business” \_\_\_\_\_

Name of Entity \_\_\_\_\_

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

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

The number of persons or entities in your entity that are required to report under [Sec. 21.-28.1 \(e\)](#): \_\_\_\_\_

**Read the following paragraph and answer one of the options:**

Within the 12 month period preceding the date of this bid submission with the City of Providence, or with respect to the contracts that are not in writing within the 12 month period preceding the date of notification that the contract has reached the \$100,000 threshold, have you made campaign contributions within a calendar year to (please list all persons or entities required under [Sec. 21.-28.1 \(e\)](#)).

a. Members of the Providence City Council?  Yes  No

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):

b. Candidates for election or reelection to the Providence City Council?  Yes  No

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):



**BOARD OF CONTRACT AND SUPPLY**  
**CITY OF PROVIDENCE, RHODE ISLAND**

c. The Mayor of Providence?  Yes  No

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):

d. Candidates for election or reelection to the office of Mayor of Providence?  Yes  No

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):

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Signed under the pains and penalties of perjury.

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Position



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**MBE/WBE Participation Plan**

**Please complete separate forms for each MBE/WBE subcontractor/supplier to be utilized on the solicitation.**

Bidder's Name:				
Bidder's Address:				
Point of Contact:				
Telephone:				
Email:				
Procurement #:				
Project Name:				
Which one of the following describes your business' status in terms of Minority and/or Woman Owned Business Enterprise certification with the State of Rhode Island? (Check all that apply).	<input type="checkbox"/> MBE	<input type="checkbox"/> WBE	<input type="checkbox"/> Neither MBE nor WBE	
<p>This form is intended to capture commitments between the prime contractor/vendor and MBE/WBE subcontractors and suppliers, including a description of the work to be performed and the percentage of the work as submitted to the prime contractor/vendor. Please note that all MBE/WBE subcontractors/suppliers must be certified by the Office of Diversity, Equity and Opportunity at the time of bid. The MBE/WBE Directory can be found <a href="#">here</a>. Please visit, the <a href="#">City's MBE/WBE page</a> for details of the program (e.g. instructions and requirements).</p> <ul style="list-style-type: none"> <li>• <b>Nonprofit organizations are not required to complete the rest of this form.</b></li> <li>• <b>Construction projects unable to identify subcontractors prior to bid submission (e.g. Design Build) are required to provide updates to the MBE/WBE Outreach Office</b></li> </ul>				
Name of Subcontractor/Supplier:				
Type of RI Certification:	<input type="checkbox"/> MBE	<input type="checkbox"/> WBE	<input type="checkbox"/> Neither	
Address:				
Point of Contact:				
Telephone:				
Email:				
Detailed Description of Work to Be Performed by Subcontractor or Materials to be Supplied by Supplier Per the Scope of Work provided in the RFP				
Total Contract Value (\$):		Subcontract Value (\$):		Participation Rate (%):
Anticipated Date of Performance:				
I certify under penalty of perjury that the forgoing statements are true and correct.				
<b>Prime Contractor/Vendor Signature</b>	<b>Title</b>			<b>Date</b>
<b>Subcontractor/Supplier Signature</b>	<b>Title</b>			<b>Date</b>

**\*If you did not meet the 20% MBE/WBE combined participation goal, submit a Waiver Request Form.**



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**MBE/WBE Waiver Request Form**

**Fill out this form only if you did not meet the 20% MBE/WBE participation goal.  
State-certified MBE or WBE Prime Bidders are NOT REQUIRED to fill out this form.**

Submit this form to the City of Providence MBE/WBE Outreach Director, Grace Diaz, at [gdiaz@providenceri.gov](mailto:gdiaz@providenceri.gov), for review **prior to bid submission**. This waiver applies only to the current bid which you are submitting to the City of Providence and does not apply to other bids your company may submit in the future. **In case a waiver is needed, City Department Directors should not recommend a bidder for an award if this form is not included, absent or is not signed by the city of Providence MBE/WBE director.**

Prime Bidder: \_\_\_\_\_ Contact Email and Phone \_\_\_\_\_  
Company Name, Address: \_\_\_\_\_ Trade \_\_\_\_\_  
Project /Item Description (as seen on RFP): \_\_\_\_\_

To receive a waiver, you must list the certified MBE and/or WBE companies you contacted, the name of the primary individual with whom you interacted, and the reason the MBE/WBE company could not participate on this project.

<b>MBE/WBE Company Name</b>	<b>Individual's Name</b>	<b>Company Name</b>	<b>Why did you choose not to work with this company?</b>

I acknowledge the City of Providence's goal of a combined MBE/WBE participation is 20% of the total bid value. I am requesting a waiver of \_\_\_\_\_ % MBE/WBE (20% minus the value of **Box F** on the Subcontractor Disclosure Form). If an opportunity is identified to subcontract any task associated with the fulfillment of this contract, a good faith effort will be made to select MBE/WBE certified businesses as partners.

\_\_\_\_\_  
Signature of Prime Contractor /  
or Duly Authorized Representative

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

\_\_\_\_\_  
Date Signed

\_\_\_\_\_  
Signature of City of Providence  
MBE/WBE Outreach Director /  
or Duly Authorized Representative

\_\_\_\_\_  
Printed Name of City of Providence  
MBE/WBE Outreach Director

\_\_\_\_\_  
Date Signed



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

## **SUPPLEMENTAL INFORMATION**

If the issuing department for this RFP determines that your firm's bid is best suited to accommodate their need, you will be asked to provide proof of the following prior to formalizing an award.

An inability to provide the outlined items at the request of the department may lead to the disqualification of your bid.

*This information is **NOT** requested to be provided in your initial bid that you will submit to the City Clerk's office by the "date to be opened" noted on page 1. This list only serves as a list of items that your firm should be ready to provide on request.*

**All bids submitted to the City Clerk become public record. Failure to follow instructions could result in information considered private being posted to the city's Open Meetings Portal and made available as a public record.**

**You must be able to provide:**

- Business Tax ID will be requested after an award is approved by the Board of Contract and Supply.
- Proof of Insurance.
- Certificate of Good Standing with the Rhode Island Secretary of State.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**CITY OF PROVIDENCE STANDARD TERMS & CONDITIONS**

1. The terms “you” and “your” contained herein refer to the person or entity that is a party to the agreement with the City of Providence (“the City”) and to such person’s or entity’s employees, officers, and agents.
2. The Request For Proposals (“RFP”) and these Standard Terms and Conditions together constitute the entire agreement of the parties (“the Agreement”) with regard to any and all matters. By your submission of a bid proposal or response to the City’s RFP, you accept these Standard Terms & Conditions and agree that they supersede any conflicting provisions provided by bid or in any terms and conditions contained or linked within a bid and/or response. Changes in the terms and conditions of the Agreement, or the scope of work thereunder, may only be made by a writing signed by the parties.
3. You are an independent contractor and in no way does this Agreement render you an employee or agent of the City or entitle you to fringe benefits, workers’ compensation, pension obligations, retirement or any other employment benefits. The City shall not deduct federal or state income taxes, social security or Medicare withholdings, or any other taxes required to be deducted by an employer, and this is your responsibility to yourself and your employees and agents.
4. You shall not assign your rights and obligations under this Agreement without the prior written consent of the City. Any assignment without prior written consent of the City shall be voidable at the election of the City. The City retains the right to refuse any and all assignments in the City’s sole and absolute discretion.
5. Invoices submitted to the City shall be payable sixty (60) days from the time of receipt by the City. Invoices shall include support documentation necessary to evidence completion of the work being invoiced. The City may request any other reasonable documentation in support of an invoice. The time for payment shall not commence, and invoices shall not be processed for payment, until you provide reasonably sufficient support documentation. In no circumstances shall the City be obligated to pay or shall you be entitled to receive interest on any overdue invoice or payment. In no circumstances shall the City be obligated to pay any costs associated with your collection of an outstanding invoice.
6. For contracts involving construction, alteration, and/or repair work, the provisions of applicable state labor law concerning payment of prevailing wage rates (R.I. Gen. Laws §§ 37-13-1 et seq., as amended) and the City’s First Source Ordinance (Providence Code of Ordinances §§ 21-91 et seq., as amended) apply.
7. With regard to any issues, claims, or controversies that may arise under this Agreement, the City shall not be required to submit to dispute resolution or mandatory/binding arbitration. Nothing prevents the parties from mutually agreeing to settle any disputes using mediation or non-binding arbitration.
8. To the fullest extent permitted by law, you shall indemnify, defend, and hold harmless the City, its employees, officers, agents, and assigns from and against any and all claims, damages, losses, allegations, demands, actions, causes of action, suits, obligations, fines, penalties, judgments, liabilities, costs and expenses, including but not limited to attorneys’ fees, of any nature whatsoever arising out of, in connection with, or resulting from the performance of the work provided in the Agreement.
9. You shall maintain throughout the term of this Agreement the insurance coverage that is required by the RFP or, if none is required in the RFP, insurance coverage that is considered in your industry to be commercially reasonable, and you agree to name the City as an additional insured on your general liability policy and on any umbrella policy you carry.
10. The City shall not subject itself to any contractual limitations on liability. The City shall have the time permitted within the applicable statute of limitations, and no less, to bring or assert any and all causes of action, suits, claims or demands the City may have arising out of, in connection with, or resulting from the performance of the work provided in the Agreement, and in no event does the City agree to limit your liability to the price of the Agreement or any other monetary limit.
11. The City may terminate this Agreement upon five (5) days’ written notice to you if you fail to observe any of the terms and conditions of this Agreement, or if the City believes your ability to perform the



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

- terms and conditions of this Agreement has been materially impaired in any way, including but in no way limited to loss of insurance coverage, lapsing of a surety bond, if required, declaration of bankruptcy, or appointment of a receiver. In the event of termination by the City, you shall be entitled to just and equitable compensation for any satisfactory work completed and expenses incurred up to the date of termination.
12. Written notice hereunder shall be deemed to have been duly served if delivered in person to the individual or member of the firm or entity or to an officer of the entity for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known by the party providing notice.
13. In no event shall the Agreement automatically renew or be extended without a writing signed by the parties.
14. You agree that products produced or resulting from the performance of the Agreement are the sole property of the City and may not be used by you without the express written permission of the City.
15. For any Agreement involving the sharing or exchange of data involving potentially confidential and/or personal information, you shall comply with any and all state and/or federal laws or regulations applicable to confidential and/or personal information you receive from the City, including but not limited to the Rhode Island Identity Theft Protection Act, R.I. Gen. Laws § 11-49.3-1, during the term of the Agreement. You shall implement and maintain appropriate physical, technical, and administrative security measures for the protection of, and to prevent access to, use, or disclosure of, confidential and/or personal information. In the event of a breach of such information, you shall notify the City of such breach immediately, but in no event later than twenty-four (24) hours after discovery of such breach.
16. The Agreement is governed by the laws of the State of Rhode Island. You expressly submit yourself to and agree that any and all actions arising out of, in connection with, or resulting from the performance of the Agreement or relationship between the parties shall occur solely in the venue and jurisdiction of the State of Rhode Island or the federal court located in Rhode Island.
17. The failure of the City to require performance of any provision shall not affect the City's right to require performance at any time thereafter, nor shall a waiver of any breach or default of this Agreement constitute a waiver of any subsequent breach or default or a waiver of the provision itself.
18. If any term or provision of this Agreement, or the application thereof to any person or circumstance shall, in any extent, be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby, and each term and provision shall be valid and enforceable to the fullest extent permitted by law.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**SUPPLEMENTAL BID FORM**

To whom it may concern:

1. The undersigned, having familiarized (himself) (themselves) (itself) with the **RENOVATIONS TO THE ROGER WILLIAMS PARK MUSEUM OF NATURAL HISTORY AND PLANETARIUM** bid affecting the cost of work, and with the Contract Documents (which includes the Invitation for Bids, Instructions to Bidders, Form of Bid Bond, Form of Agreements, form of Non-Collusive Affidavit, Addenda (if any), Drawings, Technical Specification, Form of Surety Bond(s); as prepared by the Providence Parks Department, and on file in the office of the City Clerk 3<sup>rd</sup> Floor, City Hall, Providence, RI 02903, hereby proposes to furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services including utility and transportation services, and to perform such other required work for the **RENOVATIONS TO THE ROGER WILLIAMS PARK MUSEUM OF NATURAL HISTORY AND PLANETARIUM** and such other required and incidental work, complete, all in accordance with the above listed documents and for the unit prices for work in-place for the following items and quantities.

2. In submitting this Bid, the bidder understands that the right is reserved by The Providence Parks Department to reject any and all Bids, If written notice of acceptance of this Bid is mailed, telegraphed or delivered to the undersigned within (90) days after the opening thereof, or at any time thereafter before this Bid is withdrawn, the undersigned agrees to execute and deliver an Agreement in the prescribed form and furnish the required bond within (10) days after the Agreement is presented to him/her for signature.

Herewith in accordance with the instructions to Bidders.

3. Attached hereto is an affidavit in proof that the undersigned has not colluded with any person in respect to this. Bid or any bids for the Contractor for which this Bid is submitted. Also attached is a Statement of Bidder's Qualifications.

4. Application unit prices are contained in the Agreement (established as the result of either a Unit Price Bid or a Supplemental Schedule of Unit Prices), the City of Providence may order the Contractor to proceed with desired changes in the work, the value of such changes to be determined by the measured quantities involved and the application unit prices specified in the Contract.

5. The City of Providence reserves the right to determine the lowest responsible Bidder based on past experience with the City and/or recommendations by City and/or state agencies with an interest in this procurement. The City reserves the right to award the project to the appropriate bidder in the best interest of the City of Providence.

**CERTIFICATION OF NON-SEGREGATED FACILITIES**

The Bidder certifies that he/she does not maintain or provide for his/her employees any segregated facilities at any of his establishments, and that he/she does not permit his/her employees to perform their services at any location, under his/her control, where segregation facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity Clause in any contract resulting from acceptance of this Bid. As used in this certification, term "segregation facilities" means any waiting rooms, work rooms, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employee which are segregated by explicit directive or are in fact segregated on basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The Bidder agrees that (except where he/she has obtained identical certification from proposed subcontractors for specific time periods) he/she will obtain identical certification from proposed subcontractor prior to the award of subcontracts exceeding \$1 0,000.00 which are not exempt from provisions of the Equal Opportunity Clause, and that he /she will retain such certifications in his/her files.

**NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. & 1001.**





**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

DATE \_\_\_\_\_, 20\_\_\_\_

Name of Bidder and Official Address:

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

Name of Authorized Representative (Contact):

\_\_\_\_\_

By \_\_\_\_\_

*(Signature)*

Title \_\_\_\_\_

E-Mail: \_\_\_\_\_

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

Bidder shall indicate, in space provided,  
the earliest possible Project Start-up Date: \_\_\_\_\_, 20\_\_\_\_

ADDENDA: The undersigned acknowledges receipt of the following Addenda, if any, and has included the provisions thereof in this Bid (If Any):

<u>Addendum No.</u>	<u>Date</u>	<u>Addendum No.</u>	<u>Date</u>
_____	_____, 20____	_____	_____, 20____
_____	_____, 20____	_____	_____, 20____

Sub-Contractors (If Any):

Name: \_\_\_\_\_ Scope of Work: \_\_\_\_\_ MBE / WBE

Name: \_\_\_\_\_ Scope of Work: \_\_\_\_\_ MBE / WBE

Name: \_\_\_\_\_ Scope of Work: \_\_\_\_\_ MBE / WBE



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**APPRENTICE REQUIREMENTS**

Attention of prospective bidders is called to the fact that this project is to be bid upon and executed under the City of Providence Code of Ordinances Chapter 21 Art. II Section 21-28.1 c(1) and (2) related to utilizing apprentices in the contract. This ordinance outlines requirements for utilizing not less than 15% of total hours worked by apprentices. The City may lower this percentage only if it determines in writing that compliance is not feasible or that it would be unduly cost prohibitive to the project. The attention of prospective bidders is also called to the fact that reporting the efforts undertaken and progress towards achieving the requirements in this ordinance is a condition for payment. Compliance reporting shall be submitted with any contract payment requisition, in a format to be specified by the City. This demonstration of compliance through such reports shall be a condition of the requisition for payment to be processed. Upon the contract being awarded to the successful bidder, a mandatory meeting will be scheduled to review the project requirements relative to apprenticeship requirements and the process and protocols by which these goals will be achieved. At this meeting, specific forms and procedures for the documentation and achievement of these requirements by the successful bidder will be provided, discussed and agreed upon for the execution of the contract.

**FIRST SOURCE REQUIREMENTS**

Attention of prospective bidders is called to the fact that this project is to be bid upon and executed under the City of Providence Code of Ordinances Chapter 21 Art. III 1/2 First Source Agreements Sec. 21-91 through 21-96. This ordinance outlines requirements for hiring Providence residents to work on this project. The City may waive this requirement only upon a determination in writing that qualified residents of Providence are not available for the project, pursuant to Sec. 21-94(e). The attention of prospective bidders is called to the fact that reporting the efforts undertaken and progress towards achieving the requirements in this ordinance is a condition for payment. Compliance reporting shall be submitted with any contract payment requisition, in a format to be specified by the City. This demonstration of compliance through such reports shall be a condition of the requisition for payment to be processed. Upon the contract being awarded to the successful bidder, a mandatory meeting will be scheduled to review the project requirements relative to the First Source Agreements and the process and protocols by which these goals will be achieved. At this meeting, specific forms and procedures for the documentation and achievement of these requirements by the successful bidder will be provided, discussed and agreed upon for the execution of the contract.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**ARPA REQUIREMENTS ADDENDUM**

*Federal and State Contract and Purchasing Requirements*

The following terms and conditions apply to all contractors, vendors, or subrecipients of the City of Providence and all subrecipients of subrecipients of the City of Providence and all contractors or vendors hired by the subrecipient, according to the City's Award Terms and Conditions; by ARPA and its implementing regulations; and as established by the Treasury Department.

**1. Equal Opportunity.**

Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by EO 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

**2. Minority and Women Business Enterprises (if applicable to this Contract)**

Contractor hereby agrees to comply with the following when applicable: The requirements of Executive Orders 11625 and 12432 (concerning Minority Business Enterprise), and 12138 (concerning Women's Business Enterprise), when applicable. Accordingly, the Contractor hereby agrees to take affirmative steps to assure that women and minority businesses are utilized when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall include the following:

- a) Including qualified women's business enterprises and small and minority businesses on solicitation lists;
- b) Assuring that women's enterprises and small and minority businesses are solicited whenever they are potential sources;
- c) When economically feasible, dividing total requirements into smaller tasks or quantities so as to permit maximum participation by small and minority business, and women's business enterprises;
- d) Where the requirement permits, establishing delivery schedules which will encourage participation by women's business enterprises and small and minority business;
- e) Using the services and assistance of the Small Business Administration, and the U.S. Office of Minority Business Development Agency of the Department of Commerce; and
- f) If any subcontracts are to be let, requiring the prime Contractor to take the affirmative steps in a through e above.

For the purposes of these requirements, a Minority Business Enterprise (MBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by members of the following groups: Black, Hispanic, Asian or Pacific Islander, Native American, or Alaskan Natives. Women Business Enterprise (WBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by women.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**3. Suspension and Debarment. (Applies to all purchases.)**

- (A) This contract is a covered transaction for purposes of 2 CFR pt. 180 and 2 CFR pt. 3000. As such, the Contractor is required to verify that none of Contractor's principals (defined at 2 CFR § 180.995) or its affiliates (defined at 2 CFR § 180.905) are excluded (defined at 2 CFR § 180.940) or disqualified (defined at 2 CFR § 180.935).
- (B) The Contractor must comply with 2 CFR pt. 180, subpart C and 2 CFR pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (C) This certification is a material representation of fact relied upon by the City of PROVIDENCE. If it is later determined that the contractor did not comply with 2 CFR pt. 180, subpart C and 2 CFR pt. 3000, subpart C, in addition to remedies available to the City, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (D) The Contractor agrees to comply with the requirements of 2 CFR pt. 180, subpart C and 2 CFR pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions.

**4. Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352, as amended. (Applies to all purchases.)**

Contractor certifies that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Contractor shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

\*Purchases over \$100,000 - Contractors must sign the certification on the last page of this addendum\*

**5. Access to Records. (Applies to all purchases.)**

- A. The Contractor agrees to provide the City of PROVIDENCE, the U.S. Department of Treasury, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions. The Contractor agrees to permit any of the foregoing parties to reproduce by any means or to copy excerpts and transcriptions as reasonably needed and agrees to cooperate with all such requests.
- B. The Contractor agrees to provide the Treasury Department or authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.
- C. No language in this contract is intended to prohibit audits or internal reviews by the Treasury Department or the Comptroller General of the United States.

**6. Rights to Inventions Made Under a Contract or Agreement.**

Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any applicable implementing regulations.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**7. Contract Work Hours and Safety Standards Act (40 U.S.C. 327 through 333) (applies only to purchases over \$100,000, when laborers or mechanics are used.)**

Where applicable, all contracts in excess of \$100,000 that involve the employment of mechanics or laborers shall include a provision for compliance with 40 U.S.C. 3702 and 3704 of the Contract Work Hours and Safety Standards Act, as supplemented by Department of Labor regulations (29 CFR part 5). Under Section 3702 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard workweek of 40 hours. Work in excess of the standard workweek is permissible provided that the worker is compensated at a rate of not less than 1 1/2 times the basic rate of pay for all hours worked in excess of 40 hours in the workweek. The requirements of 40 U.S.C. 3704 are applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

**8. Clean Air Act & Federal Water Pollution Control Act (applies to purchases of more than \$150,000.)**

A. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

B. The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

C. The Contractor agrees to report each violation of the Clean Air Act and the Water Pollution Control Act to the City of PROVIDENCE

D. and understands and agrees that the City will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

E. Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance.

**9. Prohibition on certain telecommunications and video surveillance services or equipment (Huawei and ZTE)**

Contractor is prohibited from obligating or expending loan or grant funds to:

1. Procure or obtain;

2. Extend or renew a contract to procure or obtain; or

3. Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

I. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

II. Telecommunications or video surveillance services provided by such entities or using such equipment.

III. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

**10. Buy USA - Domestic Preference for certain procurements using federal funds.**

Contractor should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this section:

1. "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

2. "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

**11. Procurement of Recovered Materials: (applies only if the work involves the use of materials)**

A. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:

I. Competitively within a timeframe providing for compliance with the contract performance schedule;

II. Meeting contract performance requirements; or

III. At a reasonable price.

B. Information about this requirement, along with the list of EPA - designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

C. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

**12. Publications.**

Any publications produced with funds from this award must display the following language: "This project [is being] [was] supported, in whole or in part, by federal award number [enter project FAIN] awarded to [name of Recipient] by the U.S. Department of the Treasury."

**13. Increasing Seat Belt Use in the United States.**



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

Pursuant to Executive Order 13043, 62 FR 19217 (Apr. 18, 1997), Contractor is encouraged to adopt and enforce on-the-job seat belt policies and programs for your employees when operating company-owned, rented or personally owned vehicles.

**14. Reducing Text Messaging While Driving.**

Pursuant to Executive Order 13513, 74 FR 51225 (Oct. 6, 2009), Contractor is encouraged to adopt and enforce policies that ban text messaging while driving, and establish workplace safety policies to decrease accidents caused by distracted drivers.

**15. Iran Divestment Act.**

Pursuant to the North Carolina General Assembly (S.L. 2015-118; SB455), The Iran Divestment Act is to implement the authority granted to states by federal law to impose state-level sanctions against companies that engage in certain investment activities in the energy sector of Iran.

***Additional Federal Regulations Applicable to ARPA (is hereby incorporated by reference):***

1. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 C.F.R. Part 200, other than such provisions as Treasury may determine are inapplicable to this Award and subject to such exceptions as may be otherwise provided by Treasury. Subpart F – Audit Requirements of the Uniform Guidance, implementing the Single Audit Act, shall apply to this award.
2. Universal Identifier and System for Award Management (SAM), 2 C.F.R. Part 25, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 25 is hereby incorporated by reference
3. Reporting Subaward and Executive Compensation Information, 2 C.F.R. Part 170, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 170 is hereby incorporated by reference.
4. OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Non-procurement), 2 C.F.R. Part 180, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 2 C.F.R. Part 180, subpart B) that the award is subject to 2 C.F.R. Part 180 and Treasury's implementing regulation at 31 C.F.R. Part 19.
5. Recipient Integrity and Performance Matters, pursuant to which the award term set forth in 2 C.F.R. Part 200, Appendix XII to Part 200 is hereby incorporated by reference.
6. Governmentwide Requirements for Drug-Free Workplace, 31 C.F.R. Part 20.
7. New Restrictions on Lobbying, 31 C.F.R. Part 21.
8. Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (42 U.S.C. §§ 4601-4655) and implementing regulations.
9. Generally applicable federal environmental laws and regulations.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

*Statutes and regulations prohibiting discrimination applicable to ARPA awards include, without limitation, the following:*

1. Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d et seq.) and Treasury's implementing regulations at 31 C.F.R. Part 22, which prohibit discrimination on the basis of race, color, or national origin under programs or activities receiving federal financial assistance;
2. The Fair Housing Act, Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§ 3601 et seq.), 4 which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status, or disability;
3. Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance;
4. The Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101 et seq.), and Treasury's implementing regulations at 31 C.F.R. Part 23, which prohibit discrimination on the basis of age in programs or activities receiving federal financial assistance; and

Title II of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. §§ 12101 et seq.), which prohibits discrimination on the basis of disability under programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto.





**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**PREVAILING WAGE**

This project qualifies for prevailing wages per the Prevailing Wages Statute or the Davis Bacon Act (HUD). Certified payrolls will need to be submitted to the owner for all hours worked on site for this project.

The Wage Decision for this project shall be as recorded on the Bid Date and is available on the RI Department of Labor website.

Federal Labor Standards

U.S. Department of Housing & Urban Development

**Applicability**

The Project of Program to which the Construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

- A.1. (i) **Minimum Wages.** All laborers and mechanics employed or working up on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project) will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification or work actually performed, without regard to skill, excepts as provided in 29 CFR Part 5.5 (a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFT part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.
- (ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contact shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
  - (2) The classification is utilized in the area by the construction industry; and
  - (3) The proposed wage rate, including any bona fide fringe benefits, bears a relationship to the wage rates contained in the wage determination.
- (b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

- (c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)
  - (d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
  - (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
  - (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)
2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much that the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract. HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.
3. (i) Payrolls and basic records. Payrolls and basic record relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonable anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) or the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

- (ii) (a) The contractor shall submit weekly for each in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-34 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), Government Printing Office, Washington, Dc 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)
- (b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (1) That the payroll for the payroll period contains the information required to be maintained under 20 CFR Part 5.5 (a)(3)(i) and that such information is correct and complete;
- (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (c) The weekly submission of a property executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph AA.3. (ii)(b) of this section.
- (d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code. (iii)  
The contractor or subcontractor shall make the records required under paragraph A.3. (i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.
4. (i) Apprentices and Trainees. Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprentice program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the age determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the even the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirement of Executive Order 11246, s amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.
6. Subcontracts. The contractor or subcontractor will insert in any subcontract the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all contract clauses in 29 CFR Part 5.5
7. Contracts termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor as provided in 29 CFR 5.12
8. Compliance with Davis-Bacon and Related Act Requirements. All ruling and interpretations of the Davis-Bacon and Related Act contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.
10. (i) Certification of Eligibility. By entering in to this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR part 24.  
(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act of 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.  
(iii) The penalty to making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transaction", provides in part: "Whoever,



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

for the purpose of ...influencing in any way the action of such Administration...makes, utter or publishes any statement, knowing the same to be false...shall be fined not more than \$5,000 or imprisoned not more than two years, or both.”

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms “laborers” and “mechanics” include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) or this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$25 for each calendar day on which such individual was required or permitted to work in excess of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages for liquidated damages. HUD or its designees shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold of cause to be withheld from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety

(1) No laborer or mechanic shall be required to work in surrounding or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly Part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96).

(3) The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**BID PACKAGE SPECIFICATIONS**

**Project Description:**

**RENOVATIONS TO THE ROGER WILLIAMS PARK MUSEUM OF NATURAL HISTORY AND PLANETARIUM**

**BASE BID:** The Base Bid scope of work for this project shall include, but not be limited to the following: Work of the Project includes renovations at the Roger Williams Park Natural History Museum and Planetarium as described on the drawings and in this project manual.

**ADD ALTERNATES include:**

**Alternate No. 1: Planetarium:**

This Alternate contemplates the addition to the Base Bid all work associated with construction in the Planetarium section of the building as identified and shown on the drawings.

**Alternate No. 2: Small Exhibit Hall 210:**

This Alternate contemplates the addition to the Base Bid all work associated with construction in the Small Exhibit Hall Room 210 and Vestibule 015 as identified and shown on the drawings.

**Alternate No. 3: Stained Glass Window Wall**

This Alternate contemplates the addition to the Base Bid all work associated with construction at the stained glass window wall as identified and shown on the drawings.

In addition to stating the Total Base Bid, the bidder shall state Unit Prices for related work listed under each bid item which represents the work items included in the Total Base Bid. The Unit Prices are quoted for computing adjustments to the Base Bid prior to Contract award, as well as during the course of construction, based upon extra work ordered by the City or for work countermanded, reduced or omitted by the City in order to stay within the Project budget.

**UNIT PRICES**

We propose the following Unit Prices for specific portions of the Work as listed. These Unit Prices shall be for additions to or subtractions from the Base Bid work and shall be performed under the Contract during the entire life of the Contract.

<u>Item Description</u>	<u>Unit Quantity</u>	<u>Unit Value</u>
1. Removal and replacement of existing solid wood flooring as required to match existing in material, color, and finish.	Five (5) square feet	\$ _____

Base Bid Items and Unit prices are to be Completed prices to be added or deducted on the basis of quantities of work involved, for each item in place in the unit indicated.

*Please note that the list above is not intended to include all items required to complete the base bid scope of work but can and shall be used to adjust the contract prior to or after award – in the best interest of the City of Providence.*

**All Work Included in this Project Shall be Completed for the lump sum of:**

\_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_), **TOTAL BASE BID**



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**ALLOWANCES:**

We have included the specified Allowances, from Section 01 21 00 in Division 1 of the Specifications, in the above Base Bid sum as follows:

**Allowance No. 1 – New Kiosk \$ 35,000.00**

**Allowance No. 2 – New Video Intercom System \$ 5,000.00**

**BASE BID WITH ALLOWANCES: \$ \_\_\_\_\_**

**ABBREVIATIONS**

R&S	Remove & Stockpile	EA	Each
R&D	Remove & Dispose	LF	Linear Foot
D&I	Deliver & Install, owner provided	SF	Square Foot
F&I	Furnish & Install	CY	Cubic Yard
LS	Lump Sum	TN	Ton

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

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



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**BID DOCUMENTS:**

The complete set of Bid Documents consists of the Bid Form, Technical Specifications, Minority Participation Forms, and the following Drawings:

**DRAWINGS:**

**GENERAL**

- G1.0 SHEET LIST, SYMBOLS, NOTES & ABBREVIATION LEGENDS

**ARCHITECTURAL**

- A1.0 BASEMENT FLOOR PLAN
- A1.1 1st FLOOR PLAN
- A1.2 2nd FLOOR PLAN
- A6.1 1ST FLOOR RESTROOM PLAN – WOMEN’S
- A6.2 1ST FLOOR RESTROOM PLAN – MEN’S
- A6.3 2nd FLOOR – FLOORING DIAGRAMS – INTERIOR ELEVATIONS
- A6.4 MATERIAL FINISH SCHEDULE & ACCESSORY SCHEDULE
- A7.1 DOOR DETAILS
- A8.1 REFLECTED CEILING PLANS, LIGHTING NOTES & SCHEDULE
- A8.2 FRONT ENTRANCE NEW EXTERIOR RAILING

**ELECTRICAL**

- E1.1 OVERALL LIGHTING PLAN
- E2.1 LIGHTING PLAN – FIRST FLOOR
- E2.2 LIGHTING PLAN – SECOND FLOOR
- E3.1 DETAILS

**PREVAILING WAGE DECISION**

**COPY OF THE CONTRACT**

**TECHNICAL SPECIFICATION:**

- 01 10 00 Summary of Work
- 01 20 00 Price and Payment Procedures
- 01 21 00 Allowances
- 01 22 00 Alternates
- 01 31 00 Administrative Requirements
- 01 33 00 Submittal Procedures
- 01 43 00 Quality Requirements
- 01 50 00 Temporary Facilities and Controls
- 01 60 00 Product Requirements
- 01 70 00 Execution Requirements
- 01 74 19 Waste Materials Management and Recycling





**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

- 01 78 00 Closeout Submittals
- 01 81 14 Environmental Impact of Materials
- 01 81 22 Indoor Air Quality Management During Construction
- 02 41 19 Selective Demolition
- 02 83 13 Lead Paint Consideration
- 03 31 10 Concrete Construction
- 05 50 00 Miscellaneous Metal Work
- 06 20 10 Carpentry and Millwork
- 07 21 13 Board Insulation
- 07 84 13 Firestopping
- 07 92 13 Joint Sealants
- 08 12 13 Steel Door Frames
- 08 13 13 Steel Doors
- 08 14 19 Custom Wood Doors
- 08 31 13 Access Doors
- 08 71 00 Door Hardware
- 08 71 50 Weatherstripping
- 08 81 00 Glass and Glazing
- 09 01 20 Cutting and Patching
- 09 01 60 Wood Floor Refinishing
- 09 21 16 Steel Framed Drywall Systems
- 09 26 13 Gypsum Veneer Plastering
- 09 30 13 Ceramic Tile
- 09 51 23 Acoustical Ceiling Systems
- 09 64 00 Wood Strip Flooring
- 09 65 00 Resilient Flooring
- 09 68 55 Carpet
- 09 72 50 Wall Covering
- 09 84 14 Acoustical Wall Panels
- 09 91 00 Painting
- 10 21 13.19 Solid Plastic Toilet Partitions
- 10 28 13 Toilet Room Accessories
- 12 61 15 Reupholstering of Existing Auditorium Seating
- 22 10 05 Plumbing Piping
- 22 30 00 Plumbing Equipment
- 22 40 00 Plumbing Fixtures
- 26 05 19 Low-Voltage Electrical Power Conductors and Cables
- 26 05 26 Grounding and Bonding for Electrical Systems
- 26 05 29 Hangers and Supports for Electrical Systems
- 26 05 33.13 Conduit for Electrical Systems
- 26 05 33.16 Boxes for Electrical Systems
- 26 05 53 Identification for Electrical Systems
- 26 27 26 Wiring Devices
- 26 51 00 Interior Lighting



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**ADDITIONAL INFORMATION REQUIRED WITH BID:**

- Qualifications to Perform Work – See Form Below for Information Required
- Minority Participation Forms – 10% MBE / 10 % WBE Goal on this Project
- Addenda (If Any) - Must Be Acknowledged on Bid Form
- Product Information for Items Submitted as 'Or Equal' to Specified Materials

**PROVISIONS OF THIS PROJECT:**

- Upon the Issuance of the Award from the Board of Contract – the City shall issue a Contract to be executed by the City and the vendor incorporating the bid specifications. All Provisions of the Specifications are binding.
- Any Permits Required by the City of Providence and/or State of Rhode Island Shall be Obtained by the Vendor – Permit Fees by the City of Providence Shall be Waived – the State ADA Fee Must be Paid
- The Davis Bacon Act Applies (HUD Projects) – Prevailing Wages Must Be Paid for On Site Hours – On-Site Interviews will be Conducted During the Project – Employees Shall be Advised of the Prevailing Wage Rates Prior to Mobilization on Site
- Certified payrolls Must be Submitted With Pay Requests Including Monthly Utilizations Form
- Performance and Payment Bonds (If Required) Must be Submitted within 10 Days of Award or Bid Bond Will be Forfeited
- An Insurance Certificate Shall be Submitted to the City Within 10 Days of Award
- A Copy of the Vendors Contractor's License Must be Submitted within 10 Days of Award
- All On-Site Personnel Shall be Licensed (If Required) and Shall have Proof of All Licenses Required by the State of Rhode Island to Perform the Work Required
- Pay Requests Must be Submitted on Approved AIA Billing Documents (City will Provide if Needed)
- All Subcontractors Shall be Listed on the Bid Form – All Insurance & Payroll Requirements Apply
  - General Contractor Shall be the Insurance Certificate Holder and the City Shall be Named as 'Additionally Insured' with Respect to Liability Insurance
- A Submittal Log Must be Submitted within 10 Days of Award

**CLOSE OUT DOCUMENTS:**

- Prior to Final Payment the Vendor Shall Provide the Following:
  - Copies of Permits Signed off and Approved (If Any)
  - Operating Manuals and Warranties Shall Be Transferred and/or Delivered
  - Full and Completed As-Built Drawings Shall be Submitted for Approval
  - Training Shall be Provided to City Personnel (If Required)
  - Certification by Manufactures Representative (If Required)



**BOARD OF CONTRACT AND SUPPLY  
CITY OF PROVIDENCE, RHODE ISLAND**

**QUALIFICATIONS:**

Qualifications will be evaluated on the basis of similar project experience for:

- a. Completion of at least 3 similar projects within the past five years.
- b. Size and dollar value of similar completed projects.
- c. Contractor's performance with similar projects. (references will be checked)
- d. Relevant experience of individuals assigned to the project.

Questions regarding this bid package shall be submitted via e-mail to Purchasing at [purchasing@providenceri.gov](mailto:purchasing@providenceri.gov) and **Brian Byrnes, Deputy Superintendent of Parks** at [bbyrnes@providenceri.gov](mailto:bbyrnes@providenceri.gov), no later than seven (7) working days before the bid opening date.

**PROJECT MANUAL**

**NOVEMBER 7, 2023**

**INTERIOR RENOVATIONS  
AT THE  
ROGER WILLIAMS PARK  
NATURAL HISTORY MUSEUM  
AND PLANETARIUM**

**FOR THE  
CITY OF PROVIDENCE  
RHODE ISLAND**

**BRETT P. SMILEY  
MAYOR OF PROVIDENCE**

**WENDY NILSSON  
SUPERINTENDENT OF PARKS**

**SACCOCCIO & ASSOCIATES  
ARCHITECTS**



**1085 PARK AVENUE  
CRANSTON, RHODE ISLAND**

**PROJECT NUMBER 21041**

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**DOCUMENT 00 00 10**

**TABLE OF CONTENTS**

**BIDDING DOCUMENTS, CONTRACT FORMS, AND CONDITIONS OF THE CONTRACT**

- Request for Proposals
- Instructions for Submissions
- Bid Package Checklist
- Notice to Vendors
- Bid Terms
- Bid Form 1: Bidders Blank
- Bid Form 2: Certification of Bidder
- Bid Form 3: Certificate Regarding Public Records
- WBE/MBE Form Instructions
- MBE/WBE Participation Affidavit
- Subcontractor Disclosure Form
- MBE/WBE Waiver Request Form
- Supplemental Information
- Bid Form 3: Supplemental Bid Form
- Certification of Non-segregated Facilities
- Supplemental Bid Form
- Bid Documents
- Sample Construction Agreement

00 65 19.16	Waiver of Lien Form
00 65 19.18	Affidavit of General Contractor that all Subcontractors, Suppliers and Laborers Have Been Paid and Hold Harmless Clause
00 72 13	General Conditions/A201 2017 Edition
00 73 46	Prevailing Wage Rates

**SPECIFICATIONS**

**DIVISION 1 - GENERAL REQUIREMENTS**

01 10 00	Summary of Work
01 20 00	Price and Payment Procedures
01 21 00	Allowances
01 22 00	Alternates
01 31 00	Administrative Requirements
01 33 00	Submittal Procedures
01 43 00	Quality Requirements
01 50 00	Temporary Facilities and Controls
01 60 00	Product Requirements
01 70 00	Execution Requirements
01 74 19	Waste Materials Management and Recycling
01 78 00	Closeout Submittals
01 81 14	Environmental Impact of Materials
01 81 22	Indoor Air Quality Management During Construction

**DIVISION 2 – EXISTING CONDITIONS**

02 41 19      Selective Demolition  
 02 83 13      Lead Paint Consideration

**DIVISION 3 - CONCRETE**

03 31 10      Concrete Construction

**DIVISION 4 - MASONRY**

Not Used

**DIVISION 5 - METALS**

05 50 00      Miscellaneous Metal Work

**DIVISION 6 - WOOD AND PLASTICS**

06 20 10      Carpentry and Millwork

**DIVISION 7 - MOISTURE PROTECTION**

07 21 13      Board Insulation  
 07 84 13      Firestopping  
 07 92 13      Joint Sealants

**DIVISION 8 - DOORS AND WINDOWS**

08 12 13      Steel Door Frames  
 08 13 13      Steel Doors  
 08 14 19      Custom Wood Doors  
 08 31 13      Access Doors  
 08 71 00      Door Hardware  
 08 71 50      Weatherstripping  
 08 81 00      Glass and Glazing

**DIVISION 9 - FINISHES**

09 01 20      Cutting and Patching  
 09 01 60      Wood Floor Refinishing  
 09 21 16      Steel Framed Drywall Systems  
 09 26 13      Gypsum Veneer Plastering  
 09 30 13      Ceramic Tile  
 09 51 23      Acoustical Ceiling Systems  
 09 64 00      Wood Strip Flooring  
 09 65 00      Resilient Flooring  
 09 68 55      Carpet  
 09 72 50      Wall Covering

**Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island**

**Renovations  
Job No. 21041**

09 84 14 Acoustical Wall Panels  
09 91 00 Painting

**DIVISION 10 - SPECIALTIES**

10 21 13.19 Solid Plastic Toilet Partitions  
10 28 13 Toilet Room Accessories

**DIVISION 11 - EQUIPMENT**

Not Used

**DIVISION 12 - FURNISHINGS**

12 61 15 Reupholstering of Existing Auditorium Seating

**DIVISION 13 - 21**

Not Used

**DIVISION 22 - PLUMBING**

22 10 05 Plumbing Piping  
22 30 00 Plumbing Equipment  
22 40 00 Plumbing Fixtures

**DIVISION 23 - 25**

Not Used

**DIVISION 26 - ELECTRICAL**

26 05 19 Low-Voltage Electrical Power Conductors and Cables  
26 05 26 Grounding and Bonding for Electrical Systems  
26 05 29 Hangers and Supports for Electrical Systems  
26 05 33.13 Conduit for Electrical Systems  
26 05 33.16 Boxes for Electrical Systems  
26 05 53 Identification for Electrical Systems  
26 27 26 Wiring Devices  
26 51 00 Interior Lighting

**DIVISION 27 - 48**

Not Used

END OF TABLE OF CONTENTS



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Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

DOCUMENT 00 65 19.16

WAIVER OF LIEN FORM

The 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.

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

**WAIVER OF LIEN FORM**  
**Material or Labor**

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

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

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

General Contractor's previous Application No: \_\_\_\_\_

General Contractor's previous Application Date: \_\_\_\_\_

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

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

Total payment Received to Date:  
\$ \_\_\_\_\_

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 and dated Application and Certificate for Payment.

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

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

\_\_\_\_\_  
(company/firm name)

END OF DOCUMENT

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

DOCUMENT 00 65 19.18

AFFIDAVIT OF GENERAL CONTRACTOR THAT ALL SUBCONTRACTORS,  
SUPPLIERS AND LABORERS HAVE BEEN PAID AND HOLD HARMLESS CLAUSE

The affidavit is included, following this page, as an integral part of the bid documents, for submittal with all applications for payment.

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

DOCUMENT 00815

AFFIDAVIT OF GENERAL CONTRACTOR  
THAT ALL SUBCONTRACTORS, SUPPLIERS AND LABORERS  
HAVE BEEN PAID: AND HOLD HARMLESS CLAUSE

To: ????????????

The undersigned hereby deposes, says and makes affidavit under oath that he/she is \_\_\_\_\_ of \_\_\_\_\_ and further certifies that as of today's date all monies previously advanced pursuant to requisitions of the Contractor in connection with the Project known as \_\_\_\_\_ have been paid to or are being held for and will be paid to the subcontractors, laborers, or suppliers: that there are no further amounts owing to the knowledge of the undersigned other than as set forth in the current requisition, a copy of which is attached hereto, and that only materials, fixtures, and equipment to which undersigned has absolute title have been used in the project. Further, the undersigned **HEREBY HOLDS HARMLESS THE CITY OF PROVIDENCE AND ALL COMMITTEES, BOARDS, DEPARTMENTS AND AGENCIES THEREUNDER, AND AGREES TO INDEMNIFY SAME FOR ANY ACTION OR SUIT BROUGHT BY ANY SUBCONTRACTOR, LABORER, OR SUPPLIER FOR THE PAYMENT OF ANY SUMS DUE RELATIVE TO THE AFORESAID PROJECT.** Said Hold Harmless Clause and Indemnification shall cause the undersigned to shield the City of Providence and all committees, boards, departments and agencies from all attachments, chattel mortgages, and all liens, whatsoever, sought by subcontractors, laborers and/or suppliers for collection of monies allegedly due said parties for work performed on the aforesaid Project.

On the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me  
appeared \_\_\_\_\_, where upon oath said  
property executed the foregoing Affidavit as their free act and deed.

NOTARY

My commission expires:

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

DOCUMENT 00 72 13

GENERAL CONDITIONS

AIA Document A201, General Conditions of the Contract for Construction - 2017 Edition, is included, following this page, as an integral part of the Bidding and Contract Documents. Provisions which are not amended or supplement remain in full force and effect.

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# AIA® Document A201® – 2017

## General Conditions of the Contract for Construction

for the following PROJECT:  
(Name and location or address)

Renovations to the  
Roger Williams Park Natural History Museum and Planetarium  
1000 Elmwood Avenue, Providence, RI 02905

THE OWNER:  
(Name, legal status and address)

City of Providence  
City Hall  
25 Dorrance Street  
Providence, Rhode Island

THE ARCHITECT:  
(Name, legal status and address)

Saccoccio & Associates, Architects  
1085 Park Avenue  
Cranston, RI 02910

### TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 7 CHANGES IN THE WORK
- 8 TIME
- 9 PAYMENTS AND COMPLETION
- 10 PROTECTION OF PERSONS AND PROPERTY
- 11 INSURANCE AND BONDS

### ADDITIONS AND DELETIONS:

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

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES

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**INDEX**

(Topics and numbers in bold are Section headings.)

- Acceptance of Nonconforming Work
  - 9.6.6, 9.9.3, 12.3
- Acceptance of Work
  - 9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3
- Access to Work
  - 3.16, 6.2.1, 12.1
- Accident Prevention
  - 10
- Acts and Omissions
  - 3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.3.2, 14.1, 15.1.2, 15.2
- Addenda
  - 1.1.1
- Additional Costs, Claims for
  - 3.7.4, 3.7.5, 10.3.2, 15.1.5
- Additional Inspections and Testing
  - 9.4.2, 9.8.3, 12.2.1, 13.4
- Additional Time, Claims for
  - 3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, 15.1.6
- Administration of the Contract
  - 3.1.3, 4.2, 9.4, 9.5
- Advertisement or Invitation to Bid
  - 1.1.1
- Aesthetic Effect
  - 4.2.13
- Allowances
  - 3.8
- Applications for Payment
  - 4.2.5, 7.3.9, 9.2, 9.3, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10
- Approvals
  - 2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10.1, 4.2.7, 9.3.2, 13.4.1
- Arbitration
  - 8.3.1, 15.3.2, 15.4
- ARCHITECT**
  - 4
  - Architect, Definition of
    - 4.1.1
  - Architect, Extent of Authority
    - 2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1
  - Architect, Limitations of Authority and Responsibility
    - 2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2, 9.5.4, 9.6.4, 15.1.4, 15.2
  - Architect's Additional Services and Expenses
    - 2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4
  - Architect's Administration of the Contract
    - 3.1.3, 3.7.4, 15.2, 9.4.1, 9.5
  - Architect's Approvals
    - 2.5, 3.1.3, 3.5, 3.10.2, 4.2.7
  - Architect's Authority to Reject Work
    - 3.5, 4.2.6, 12.1.2, 12.2.1
  - Architect's Copyright
    - 1.1.7, 1.5
  - Architect's Decisions
    - 3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.4.2, 15.2
  - Architect's Inspections
    - 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4
  - Architect's Instructions
    - 3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2
  - Architect's Interpretations
    - 4.2.11, 4.2.12
  - Architect's Project Representative
    - 4.2.10
  - Architect's Relationship with Contractor
    - 1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2
  - Architect's Relationship with Subcontractors
    - 1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3
  - Architect's Representations
    - 9.4.2, 9.5.1, 9.10.1
  - Architect's Site Visits
    - 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
  - Asbestos
    - 10.3.1
  - Attorneys' Fees
    - 3.18.1, 9.6.8, 9.10.2, 10.3.3
  - Award of Separate Contracts
    - 6.1.1, 6.1.2
  - Award of Subcontracts and Other Contracts for Portions of the Work
    - 5.2
  - Basic Definitions
    - 1.1
  - Bidding Requirements
    - 1.1.1
  - Binding Dispute Resolution
    - 8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1
  - Bonds, Lien
    - 7.3.4.4, 9.6.8, 9.10.2, 9.10.3
  - Bonds, Performance, and Payment
    - 7.3.4.4, 9.6.7, 9.10.3, 11.1.2, 11.1.3, 11.5
  - Building Information Models Use and Reliance
    - 1.8
  - Building Permit
    - 3.7.1
  - Capitalization
    - 1.3
  - Certificate of Substantial Completion
    - 9.8.3, 9.8.4, 9.8.5

Init.

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(3B9ADA35)

3

Certificates for Payment	3.7.4, 4.2.8, 8.3.1, 10.3
4.2.1, 4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4	Conditions of the Contract
Certificates of Inspection, Testing or Approval	1.1.1, 6.1.1, 6.1.4
13.4.4	Consent, Written
Certificates of Insurance	3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2, 15.4.4.2
9.10.2	Consolidation or Joinder
Change Orders	15.4.4
1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3, 7.1.2, 7.1.3, 7.2, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2	CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
Change Orders, Definition of	1.1.4, 6
7.2.1	Construction Change Directive, Definition of
CHANGES IN THE WORK	7.3.1
2.2.2, 3.11, 4.2.8, 7, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1, 11.5	Construction Change Directives
Claims, Definition of	1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, 7.3, 9.3.1.1
15.1.1	Construction Schedules, Contractor's
Claims, Notice of	3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2
1.6.2, 15.1.3	Contingent Assignment of Subcontracts
CLAIMS AND DISPUTES	5.4, 14.2.2.2
3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, 15, 15.4	Continuing Contract Performance
Claims and Timely Assertion of Claims	15.1.4
15.4.1	Contract, Definition of
Claims for Additional Cost	1.1.2
3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, 15.1.5	CONTRACT, TERMINATION OR SUSPENSION OF THE
Claims for Additional Time	5.4.1.1, 5.4.2, 11.5, 14
3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, 15.1.6	Contract Administration
Concealed or Unknown Conditions, Claims for	3.1.3, 4, 9.4, 9.5
3.7.4	Contract Award and Execution, Conditions Relating to
Claims for Damages	3.7.1, 3.10, 5.2, 6.1
3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3, 11.3.2, 14.2.4, 15.1.7	Contract Documents, Copies Furnished and Use of
Claims Subject to Arbitration	1.5.2, 2.3.6, 5.3
15.4.1	Contract Documents, Definition of
Cleaning Up	1.1.1
3.15, 6.3	Contract Sum
Commencement of the Work, Conditions Relating to	2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4, 9.1, 9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2, 12.3, 14.2.4, 14.3.2, 15.1.4.2, 15.1.5, 15.2.5
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3, 6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, 15.1.5	Contract Sum, Definition of
Commencement of the Work, Definition of	9.1
8.1.2	Contract Time
Communications	1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5, 7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1, 8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2, 14.3.2, 15.1.4.2, 15.1.6.1, 15.2.5
3.9.1, 4.2.4	Contract Time, Definition of
Completion, Conditions Relating to	8.1.1
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1, 9.10, 12.2, 14.1.2, 15.1.2	CONTRACTOR
COMPLETION, PAYMENTS AND	3
9	Contractor, Definition of
Completion, Substantial	3.1, 6.1.2
3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 15.1.2	Contractor's Construction and Submittal Schedules
Compliance with Laws	3.10, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2
2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3	Contractor's Employees
Concealed or Unknown Conditions	

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- 2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.3, 14.1, 14.2.1.1
- Contractor's Liability Insurance
  - 11.1
  - Contractor's Relationship with Separate Contractors and Owner's Forces
    - 3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4
  - Contractor's Relationship with Subcontractors
    - 1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2, 9.6.7, 9.10.2, 11.2, 11.3, 11.4
  - Contractor's Relationship with the Architect
    - 1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.4, 15.1.3, 15.2.1
  - Contractor's Representations
    - 3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2
  - Contractor's Responsibility for Those Performing the Work
    - 3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8
  - Contractor's Review of Contract Documents
    - 3.2
    - Contractor's Right to Stop the Work
      - 2.2.2, 9.7
    - Contractor's Right to Terminate the Contract
      - 14.1
    - Contractor's Submittals
      - 3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3
    - Contractor's Superintendent
      - 3.9, 10.2.6
    - Contractor's Supervision and Construction Procedures
      - 1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4
    - Coordination and Correlation
      - 1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1
    - Copies Furnished of Drawings and Specifications
      - 1.5, 2.3.6, 3.11
    - Copyrights
      - 1.5, 3.17
    - Correction of Work
      - 2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, 12.2, 12.3, 15.1.3.1, 15.1.3.2, 15.2.1
    - Correlation and Intent of the Contract Documents
      - 1.2
    - Cost, Definition of
      - 7.3.4
    - Costs
      - 2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1.1, 6.2.3, 7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.2, 12.1.2, 12.2.1, 12.2.4, 13.4, 14
    - Cutting and Patching
      - 3.14, 6.2.5
    - Damage to Construction of Owner or Separate Contractors
      - 3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4
    - Damage to the Work
      - 3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4
    - Damages, Claims for
      - 3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2, 11.3, 14.2.4, 15.1.7
    - Damages for Delay
      - 6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2
    - Date of Commencement of the Work, Definition of
      - 8.1.2
    - Date of Substantial Completion, Definition of
      - 8.1.3
    - Day, Definition of
      - 8.1.4
    - Decisions of the Architect
      - 3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2, 14.2.2, 14.2.4, 15.1, 15.2
    - Decisions to Withhold Certification
      - 9.4.1, 9.5, 9.7, 14.1.1.3
    - Defective or Nonconforming Work, Acceptance, Rejection and Correction of
      - 2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1
    - Definitions
      - 1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1
    - Delays and Extensions of Time
      - 3.2, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7, 10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5
    - Digital Data Use and Transmission
      - 1.7
    - Disputes
      - 6.3, 7.3.9, 15.1, 15.2
    - Documents and Samples at the Site
      - 3.11
      - Drawings, Definition of
        - 1.1.5
      - Drawings and Specifications, Use and Ownership of
        - 3.11
      - Effective Date of Insurance
        - 8.2.2
      - Emergencies
        - 10.4, 14.1.1.2, 15.1.5
      - Employees, Contractor's
        - 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.3, 14.1, 14.2.1.1
      - Equipment, Labor, or Materials
        - 1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
      - Execution and Progress of the Work
        - 1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1, 9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4
      - Extensions of Time
        - 3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2, 10.4, 14.3, 15.1.6, 15.2.5

Failure of Payment	
9.5.1.3, 9.7, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2	
Faulty Work	
(See Defective or Nonconforming Work)	
Final Completion and Final Payment	
4.2.1, 4.2.9, 9.8.2, 9.10, 12.3, 14.2.4, 14.4.3	
Financial Arrangements, Owner's	
2.2.1, 13.2.2, 14.1.1.4	
GENERAL PROVISIONS	
1	
Governing Law	
13.1	
Guarantees (See Warranty)	
Hazardous Materials and Substances	
10.2.4, 10.3	
Identification of Subcontractors and Suppliers	
5.2.1	
Indemnification	
3.17, 3.18, 9.6.8, 9.10.2, 10.3.3, 11.3	
Information and Services Required of the Owner	
2.1.2, 2.2, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,	
9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,	
14.1.1.4, 14.1.4, 15.1.4	
Initial Decision	
15.2	
Initial Decision Maker, Definition of	
1.1.8	
Initial Decision Maker, Decisions	
14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5	
Initial Decision Maker, Extent of Authority	
14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5	
Injury or Damage to Person or Property	
10.2.8, 10.4	
Inspections	
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,	
9.9.2, 9.10.1, 12.2.1, 13.4	
Instructions to Bidders	
1.1.1	
Instructions to the Contractor	
3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2	
Instruments of Service, Definition of	
1.1.7	
Insurance	
6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5,	
11	
Insurance, Notice of Cancellation or Expiration	
11.1.4, 11.2.3	
Insurance, Contractor's Liability	
11.1	
Insurance, Effective Date of	
8.2.2, 14.4.2	
Insurance, Owner's Liability	
11.2	
Insurance, Property	
10.2.5, 11.2, 11.4, 11.5	
Insurance, Stored Materials	
9.3.2	
INSURANCE AND BONDS	
11	
Insurance Companies, Consent to Partial Occupancy	
9.9.1	
Insured loss, Adjustment and Settlement of	
11.5	
Intent of the Contract Documents	
1.2.1, 4.2.7, 4.2.12, 4.2.13	
Interest	
13.5	
Interpretation	
1.1.8, 1.2.3, 1.4, 4.1.1, 5.1, 6.1.2, 15.1.1	
Interpretations, Written	
4.2.11, 4.2.12	
Judgment on Final Award	
15.4.2	
Labor and Materials, Equipment	
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,	
5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,	
10.2.4, 14.2.1.1, 14.2.1.2	
Labor Disputes	
8.3.1	
Laws and Regulations	
1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,	
9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8,	
15.4	
Liens	
2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8	
Limitations, Statutes of	
12.2.5, 15.1.2, 15.4.1.1	
Limitations of Liability	
3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6,	
4.2.7, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3,	
11.3, 12.2.5, 13.3.1	
Limitations of Time	
2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,	
5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,	
9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,	
15.1.2, 15.1.3, 15.1.5	
Materials, Hazardous	
10.2.4, 10.3	
Materials, Labor, Equipment and	
1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,	
5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2,	
10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2	
Means, Methods, Techniques, Sequences and	
Procedures of Construction	
3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2	
Mechanic's Lien	
2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8	
Mediation	
8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, 15.3, 15.4.1,	
15.4.1.1	
Minor Changes in the Work	
1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, 7.4	
MISCELLANEOUS PROVISIONS	
13	

Init.

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User Notes:

(3B9ADA35)

- Modifications, Definition of
  - 1.1.1
- Modifications to the Contract
  - 1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7, 10.3.2
- Mutual Responsibility
  - 6.2
- Nonconforming Work, Acceptance of
  - 9.6.6, 9.9.3, 12.3
- Nonconforming Work, Rejection and Correction of
  - 2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4, 12.2
- Notice
  - 1.6, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4, 3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4, 8.2.2, 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1, 13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5, 15.1.6, 15.4.1
- Notice of Cancellation or Expiration of Insurance
  - 11.1.4, 11.2.3
- Notice of Claims
  - 1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, 15.1.3, 15.1.5, 15.1.6, 15.2.8, 15.3.2, 15.4.1
- Notice of Testing and Inspections
  - 13.4.1, 13.4.2
- Observations, Contractor's
  - 3.2, 3.7.4
- Occupancy
  - 2.3.1, 9.6.6, 9.8
- Orders, Written
  - 1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2, 14.3.1
- OWNER
  - 2
- Owner, Definition of
  - 2.1.1
- Owner, Evidence of Financial Arrangements
  - 2.2, 13.2.2, 14.1.1.4
- Owner, Information and Services Required of the
  - 2.1.2, 2.2, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4
- Owner's Authority
  - 1.5, 2.1.1, 2.3, 3.2.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4, 15.2.7
- Owner's Insurance
  - 11.2
- Owner's Relationship with Subcontractors
  - 1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2
- Owner's Right to Carry Out the Work
  - 2.5, 14.2.2
- Owner's Right to Clean Up
  - 6.3
- Owner's Right to Perform Construction and to Award
  - Separate Contracts
    - 6.1
  - Owner's Right to Stop the Work
    - 2.4
  - Owner's Right to Suspend the Work
    - 14.3
  - Owner's Right to Terminate the Contract
    - 14.2, 14.4
  - Ownership and Use of Drawings, Specifications and Other Instruments of Service
    - 1.1.1, 1.1.6, 1.1.7, 1.5, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12, 5.3
  - Partial Occupancy or Use
    - 9.6.6, 9.9
  - Patching, Cutting and
    - 3.14, 6.2.5
  - Patents
    - 3.17
  - Payment, Applications for
    - 4.2.5, 7.3.9, 9.2, 9.3, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1, 14.2.3, 14.2.4, 14.4.3
  - Payment, Certificates for
    - 4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4
  - Payment, Failure of
    - 9.5.1.3, 9.7, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2
  - Payment, Final
    - 4.2.1, 4.2.9, 9.10, 12.3, 14.2.4, 14.4.3
  - Payment Bond, Performance Bond and
    - 7.3.4.4, 9.6.7, 9.10.3, 11.1.2
  - Payments, Progress
    - 9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4
  - PAYMENTS AND COMPLETION
    - 9
  - Payments to Subcontractors
    - 5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2
  - PCB
    - 10.3.1
  - Performance Bond and Payment Bond
    - 7.3.4.4, 9.6.7, 9.10.3, 11.1.2
  - Permits, Fees, Notices and Compliance with Laws
    - 2.3.1, 3.7, 3.13, 7.3.4.4, 10.2.2
  - PERSONS AND PROPERTY, PROTECTION OF
    - 10
  - Polychlorinated Biphenyl
    - 10.3.1
  - Product Data, Definition of
    - 3.12.2
  - Product Data and Samples, Shop Drawings
    - 3.11, 3.12, 4.2.7
  - Progress and Completion
    - 4.2.2, 8.2, 9.8, 9.9.1, 14.1.4, 15.1.4
  - Progress Payments
    - 9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4
  - Project, Definition of
    - 1.1.4
  - Project Representatives

Int.

4.2.10	6.1.1
Property Insurance	Shop Drawings, Definition of
10.2.5, 11.2	3.12.1
Proposal Requirements	Shop Drawings, Product Data and Samples
1.1.1	3.11, 3.12, 4.2.7
<b>PROTECTION OF PERSONS AND PROPERTY</b>	Site, Use of
<b>10</b>	3.13, 6.1.1, 6.2.1
Regulations and Laws	Site Inspections
1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1,	3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4
10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8,	Site Visits, Architect's
15.4	3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
Rejection of Work	Special Inspections and Testing
4.2.6, 12.2.1	4.2.6, 12.2.1, 13.4
Releases and Waivers of Liens	Specifications, Definition of
9.3.1, 9.10.2	1.1.6
Representations	Specifications
3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1	1.1.1, 1.1.6, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14
Representatives	Statute of Limitations
2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1	15.1.2, 15.4.1.1
Responsibility for Those Performing the Work	Stopping the Work
3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10	2.2.2, 2.4, 9.7, 10.3, 14.1
Retainage	Stored Materials
9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3	6.2.1, 9.3.2, 10.2.1.2, 10.2.4
Review of Contract Documents and Field Conditions	Subcontractor, Definition of
by Contractor	5.1.1
3.2, 3.12.7, 6.1.3	<b>SUBCONTRACTORS</b>
Review of Contractor's Submittals by Owner and	<b>5</b>
Architect	Subcontractors, Work by
3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2	1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4,
Review of Shop Drawings, Product Data and	9.3.1.2, 9.6.7
Samples by Contractor	Subcontractual Relations
3.12	5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1
Rights and Remedies	Submittals
1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1,	3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3,
6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2,	9.8, 9.9.1, 9.10.2, 9.10.3
12.2.4, 13.3, 14, 15.4	Submittal Schedule
Royalties, Patents and Copyrights	3.10.2, 3.12.5, 4.2.7
3.17	Subrogation, Waivers of
Rules and Notices for Arbitration	6.1.1, 11.3
15.4.1	Substances, Hazardous
Safety of Persons and Property	10.3
10.2, 10.4	Substantial Completion
Safety Precautions and Programs	4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3,
3.3.1, 4.2.2, 4.2.7, 5.3, 10.1, 10.2, 10.4	12.2, 15.1.2
Samples, Definition of	Substantial Completion, Definition of
3.12.3	9.8.1
Samples, Shop Drawings, Product Data and	Substitution of Subcontractors
3.11, 3.12, 4.2.7	5.2.3, 5.2.4
Samples at the Site, Documents and	Substitution of Architect
3.11	2.3.3
Schedule of Values	Substitutions of Materials
9.2, 9.3.1	3.4.2, 3.5, 7.3.8
Schedules, Construction	Sub-subcontractor, Definition of
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2	5.1.2
Separate Contracts and Contractors	Subsurface Conditions
1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2	3.7.4
Separate Contractors, Definition of	Successors and Assigns

Init.

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User Notes:

(3B9ADA35)

- 13.2  
 Superintendent  
 3.9, 10.2.6  
 Supervision and Construction Procedures  
 1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4,  
 7.1.3, 7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4  
 Suppliers  
 1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6,  
 9.10.5, 14.2.1  
 Surety  
 5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2,  
 15.2.7  
 Surety, Consent of  
 9.8.5, 9.10.2, 9.10.3  
 Surveys  
 1.1.7, 2.3.4  
 Suspension by the Owner for Convenience  
 14.3  
 Suspension of the Work  
 3.7.5, 5.4.2, 14.3  
 Suspension or Termination of the Contract  
 5.4.1.1, 14  
 Taxes  
 3.6, 3.8.2.1, 7.3.4.4  
 Termination by the Contractor  
 14.1, 15.1.7  
 Termination by the Owner for Cause  
 5.4.1.1, 14.2, 15.1.7  
 Termination by the Owner for Convenience  
 14.4  
 Termination of the Architect  
 2.3.3  
 Termination of the Contractor Employment  
 14.2.2
- TERMINATION OR SUSPENSION OF THE CONTRACT**  
 14  
 Tests and Inspections  
 3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,  
 9.9.2, 9.10.1, 10.3.2, 12.2.1, 13.4  
**TIME**  
 8  
 Time, Delays and Extensions of  
 3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7,  
 10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5  
 Time Limits  
 2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2,  
 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,  
 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14,  
 15.1.2, 15.1.3, 15.4  
 Time Limits on Claims  
 3.7.4, 10.2.8, 15.1.2, 15.1.3  
 Title to Work  
 9.3.2, 9.3.3  
**UNCOVERING AND CORRECTION OF WORK**  
 12  
 Uncovering of Work  
 12.1  
 Unforeseen Conditions, Concealed or Unknown  
 3.7.4, 8.3.1, 10.3  
 Unit Prices  
 7.3.3.2, 9.1.2  
 Use of Documents  
 1.1.1, 1.5, 2.3.6, 3.12.6, 5.3  
 Use of Site  
 3.13, 6.1.1, 6.2.1  
 Values, Schedule of  
 9.2, 9.3.1  
 Waiver of Claims by the Architect  
 13.3.2  
 Waiver of Claims by the Contractor  
 9.10.5, 13.3.2, 15.1.7  
 Waiver of Claims by the Owner  
 9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, 15.1.7  
 Waiver of Consequential Damages  
 14.2.4, 15.1.7  
 Waiver of Liens  
 9.3, 9.10.2, 9.10.4  
 Waivers of Subrogation  
 6.1.1, 11.3  
 Warranty  
 3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2,  
 15.1.2  
 Weather Delays  
 8.3, 15.1.6.2  
 Work, Definition of  
 1.1.3  
 Written Consent  
 1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3,  
 13.2, 13.3.2, 15.4.4.2  
 Written Interpretations  
 4.2.11, 4.2.12  
 Written Orders  
 1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

Init.



## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 Basic Definitions**

#### **§ 1.1.1 The Contract Documents**

The Contract Documents consist of the Agreement between the Owner and Contractor (hereinafter, the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents include the advertisement or invitation to bid, Instructions to Bidders, sample forms, information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, and Addenda relating to those documents.

In the event of any conflict among the Contract Documents, the Documents shall be construed according to the following priorities:

#### **§ 1.1.2 The Contract**

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

#### **§ 1.1.3 The Work**

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

#### **§ 1.1.4 The Project**

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

#### **§ 1.1.5 The Drawings**

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

#### **§ 1.1.6 The Specifications**

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

#### **§ 1.1.7 Instruments of Service**

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

#### **§ 1.1.8 Initial Decision Maker**

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

### **§ 1.2 Correlation and Intent of the Contract Documents**

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by

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one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. All Work mentioned or indicated in the Contract Documents shall be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others. Should the Drawings or the Specifications disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of Work unless otherwise directed by written addendum to the Contract.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. The Contractor and all Subcontractors shall refer to all of the Drawings, including those showing primarily the Work of the mechanical, electrical and other specialized trades, and to all of the Sections of the Specifications, and shall perform all Work reasonably inferable therefrom as being necessary to produce the indicated results.

§ 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 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents.

§ 1.2.5 Where codes, standards, requirements and publications of public and private bodies are referred to in the Specifications, references shall be understood to be to the latest revision prior to the date of receiving bids, except where otherwise indicated.

§ 1.2.6 Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of good quality for the intended use and consistent with the quality of the surrounding Work and of the construction of the Project generally.

§ 1.2.7 All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.

§ 1.2.8 All drawings are diagrammatic and indicate general arrangement of systems and equipment, except when specifically dimensioned or detailed. For exact locations of building elements, refer to dimensioned drawings. Field measurements take precedence over dimensioned drawings. Intention is to show size, capacity, approximate location, direction and general relationship of one work phase to another, but not exact detail or arrangement. Installation of all systems and equipment is subject to clarification as indicated in reviewed shop drawings and field coordination drawings. Dimensions indicated on contract drawings are limiting dimensions. Do not use equipment exceeding dimensions indicated or equipment or arrangements that reduce required clearances or exceed specified maximum dimensions.

§ 1.2.9 The Mechanical, Plumbing, Electrical and Fire Protection Drawings are diagrammatic only, and are not intended to show the alignment, physical locations or configurations of such Work. Such Work shall be installed without additional cost to the Owner to clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance where exposed. Prior to beginning such Work, the Contractor shall prepare coordination drawings showing the exact alignment, physical location and configuration of the Mechanical, Plumbing, Electrical and Fire Protection installations and demonstrating to the Contractor's satisfaction that the installations will comply with the preceding sentence. A copy of the drawings shall be submitted to the Architect, and the Contractor shall revise and resubmit the drawings if so directed by the Architect.

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§ 1.2.10 Exact locations of fixtures and outlets shall be obtained from the Architect as provided in subparagraph 3.2.5 before the Work is roughed in; Work installed without such information from the Architect shall be relocated at the Contractor's expense.

§ 1.2.11 Test boring or soil test information included with the Contract Documents or otherwise made available to the Contractor was obtained by the Owner for use by the Architects in the design of the Project or Work. The Owner does not hold out such information to the Contractor as a completely accurate indication of subsurface conditions, and no claim for extra cost or extension of time resulting from a reliance by the Contractor on such information shall be allowed except as provided in subparagraph 3.7.4.

§ 1.2.12 Where the Work is to fit with existing conditions or work to be performed by others, the Contractor shall fully and completely join the Work with such conditions or work, unless otherwise specified. Owner provided drawings showing existing conditions or construction are based on available documents and are not guaranteed to show actual existing conditions.

### § 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 All Drawings, Specifications and copies thereof furnished by the Owner are and shall remain the Owner's property. They are to be used only with respect to this Project and are not to be used on any other project without the prior written consent of the Owner. With the exception of one contract set for each party to the Contract, such documents are to be returned or suitably accounted for to the Owner at the completion of the Work. Submission or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of any reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

### § 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

### § 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

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### § 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™-2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

## ARTICLE 2 OWNER

### § 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

*(Paragraph Deleted)*

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

#### § 2.2.1 Not Used.

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

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

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

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

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

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§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish available surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner except to the extent that the Contractor's review thereof reveals, or in the exercise of reasonable diligence should have revealed, any inaccuracy or incompleteness therein. The Owner makes no warranty as to the accuracy or completeness of such information. The Contractor shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 Information or services required of the Owner by the Contract Documents shall be furnished by the Owner with reasonable promptness after receipt from the Contractor of a written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, 5 copies of Drawings and Project Manuals. All additional hard copies will be furnished upon request at the cost of reproduction.

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

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity. The Contractor shall resume the Work after such stoppage promptly upon written notice to do so from the Owner. The Contractor shall remain responsible for maintaining the progress of the Work and shall not be entitled to any increase in the Contract Sum or Contract Time. The Contractor shall be responsible for all costs incurred by the Owner attributable to such an order to stop the Work.

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

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's and Owner's Project Manager's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

The rights of the Owner hereunder are in addition to any other rights set forth in the Contract Documents or available at law or in equity.

### ARTICLE 3 CONTRACTOR

#### § 3.1 General

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

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

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

### § 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents. The Contractor shall not be entitled to any change in the Contract Time or Contract Sum on account of its failure, or that of any Subcontractor, to comply with the foregoing requirements.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. The Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. If the Contractor performs any construction activity that it knows or should know involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Architect, the Contractor shall assume appropriate responsibility for such performance and shall bear responsibility for the costs of any required correction.

§ 3.2.3 The Contractor is 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. The Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations.

§ 3.2.5 Any claim by the Contractor, in submitting their bid, they did not include all items as shown in the Contract Documents, will be given no consideration for an adjustment of any kind.

§ 3.2.6 The Contractor shall give the Architect timely notice of any additional Drawings, Specifications, or instructions required to define the Work in greater detail, or to permit the proper progress of the Work.

§ 3.2.7 The Contractor shall not proceed with any Work not clearly and consistently defined in detail in the Contract Documents, but shall request additional drawings or instructions from the Architect as provided in subparagraph 3.2.5. If the Contractor proceeds with such Work without obtaining further Drawings, Specifications or instructions, the Contractor shall correct Work incorrectly done at the Contractor's own expense.

### § 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 which shall not be less than such state of skill and attention generally rendered by the contracting profession for projects similar to the Project in scope difficulty and location.

The Contractor shall adequately staff the Project to properly and thoroughly manage, schedule and supervise all construction activities.

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 Contractor unless the Contract Documents give other specific instructions concerning these matters. Where the contract documents refer to particular construction means, methods, techniques, sequences or procedures or indicate or imply that such are to be used in the Work, such mention is intended only to indicate that the operations of the Contractor shall be such as to produce at least the quality of work implied by the operations described, by the actual determination of whether or not the described operations may be safely and suitably employed on the Work shall be the responsibility of the Contractor, who should notify the Architect in writing of the actual means, methods, techniques, sequences or procedures which will be employed on the Work, if these differ from those mentioned in the Contract Documents.

All loss, damage, or liability, or cost of correcting defective work arising from the employment of any construction means, methods, techniques, sequences, or procedures shall be corrected at Contractor's expense, not withstanding that such construction means, methods, techniques, sequences, or procedures are referred to, indicated or implied by the Contract Documents, unless the Contractor has given timely notice to the Owner and Architect in writing that

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such means, methods, techniques, sequences or procedures are not safe or suitable, and the Owner has then instructed the Contractor in writing to proceed at the Owner's risk.

**§ 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. This obligation shall also extend to the presence on the Site of suppliers of materials or equipment, their employees, contractors, and agents engaged in the Work.

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

#### **§ 3.4 Labor and Materials**

**§ 3.4.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

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

**§ 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, and the Contractor shall ensure that all workers to be employed on the Project have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration (OSHA) of at least 10 hours. The Contractor shall be responsible for maintaining all safety precautions at and around the Project site. On the Owner's request, the Contractor shall permanently remove from the Project site any employee of the Contractor or any Subcontractor who fails to comply with the requirements of the Contract Documents or whose presence or behavior is deemed by the Owner to be adverse to the success of the Project or the Owner's interests.

#### **§ 3.5 Warranty**

**§ 3.5.1** The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise and, promptly after written notification of non-conformance, shall be repaired or replaced by the Contractor with Work conforming to such requirements.

The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**§ 3.5.2** All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

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#### **3.5.3**

The Contractor shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The Architect may require the Contractor to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the Architect, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the Contractor's expense. This provision shall not require the Contractor to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the Contractor's expense.

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§3.5.4 The Contractor shall guarantee all Work for a period of **one year** after Date of Substantial Completion, or by the terms of any special guarantee required by the Contract Documents. The Contractor shall, upon written notice from the Owner, promptly correct defective Work or Work not in accordance with the Contract Documents.

### § 3.6 Taxes

The Owner is exempt from Rhode Island sales tax on products permanently incorporated in Work of the Project.

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

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

**The City of Providence has waived all permit fees. The Contractor is still required to file an application and obtain all pertinent permits before construction and pay all inspection fees. The State ADA fee must be paid by the Contractor.**

§ 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. If any of the Work is required to be inspected or approved by any public authority, the Contractor shall cause such inspection or approval to be performed and shall comply with any instructions or corrections ordered by the public authority.

§ 3.7.3 If the Contractor performs Work it knows or should know 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

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If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. 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.

### § 3.8 Allowances

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

*(Paragraphs Deleted)*

### § 3.9 Superintendent

§ 3.9.1 The Contractor shall employ, in accordance with the Contract Documents, a competent superintendent and necessary assistants who shall be in attendance at the Project site at all times during performance of the Work until the date of Substantial Completion, and for such time thereafter as the Architect may determine to be necessary for the expeditious completion of the Work. The Contractor shall remove the superintendent if requested in writing by the Owner, and shall replace him/her with a competent person reasonably acceptable to Owner. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.



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

§ 3.9.4 The Contractor shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the Work. The Contractor and all Subcontractors shall at all times afford each trade, any separate contractor, or the Owner, every reasonable opportunity for the installation of Work and the storage of materials.

**§ 3.10 Contractor's Construction and Submittal Schedules**

§ 3.10.1 The Contractor, within twenty (20) calendar days after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Projector as requested by the Architect.

The construction schedule shall be in such form and contain such information as the Architect and Owner require. The construction schedule shall be resource loaded for the Contractor and all subcontractors, with each resource identified by name, description, unit of measure, and calendar assignment. For each class of work included in the Contractor's schedule of values, the construction schedule shall show the percentage of completion to be obtained and the total dollar value of the work to be completed as of the first of each month until Substantial Completion. All calculations shall be on the basis of work in place, but not including the value of materials delivered but not in place.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

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

The Contractor's compliance with the construction schedule is a material obligation of the Contract.

§ 3.10.4 The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The construction schedule shall be updated every month (or more frequently if requested by the Owner) to reflect actual conditions (such updates are sometimes referred to in these General Conditions as "progress reports"). In the event any progress report indicates delays in achievement of any milestone date set forth in such schedule, the Contractor shall propose in written form an affirmative plan (the "Recovery Schedule") to correct the delay, including overtime and/or additional labor, if necessary, which Recovery Schedule shall indicate the date by which the progress of the Work will comply with the construction schedule, and shall be subject to the approval of the Owner and the Architect. In no event shall any progress report or Recovery Schedule constitute an adjustment in the construction schedule, Contract Time or any milestone date unless any such adjustment is agreed to by the Owner and authorized pursuant to a Change Order.

§ 3.10.5 In the event (i) that the performance of the Work, as of a milestone date, has not progressed or reached the level of completion required by the construction schedule, and (ii) the progress of the Work is not brought back into compliance with the construction schedule on the date proposed by the Recovery Schedule, or the Contractor otherwise fails to comply with the Recovery Schedule, the Owner shall have the right to order the Contractor to take

corrective measures to expedite the progress of the Work, including, without limitation, (1) supplying additional manpower, equipment, and facilities, (2) working additional shifts or overtime, (3) working additional days, and (4) other similar measures (hereinafter referred to collectively as "Corrective Measures"). Such Corrective Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents.

**§ 3.10.6** The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Corrective Measures required by the Owner under or pursuant to Section 3.10.5. The Owner may exercise the rights furnished the Owner under or pursuant to Section 3.10.5 as frequently as reasonably necessary to ensure that the Contractor's performance of the Work complies with the milestone dates set forth in the construction schedule.

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

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

**§ 3.12 Shop Drawings, Product Data and Samples**

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

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

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

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

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

**§ 3.12.6** By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals the Contractor thereby represents that the Contractor has determined and verified all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

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**§ 3.12.7** The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

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

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

**§ 3.12.10** The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

**§ 3.12.10.1** If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

**§ 3.12.10.2** If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

**§ 3.12.11** When professional certification of materials, systems or equipment is required by the Contract Documents, the Owner shall be entitled to rely upon such certifications, and neither the Owner nor the Architect shall be expected to make an independent examination with respect to the performance of such materials, systems or equipment.

### **§ 3.13 Use of Site**

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

The right of possession of the premises and the improvements made thereon by the Contractor shall remain at all times with the Owner. The Contractor's right to entry and use thereof arises solely from the permission granted by the Owner under the Contract Documents. The Owner shall not be liable to the Contractor, the Subcontractors, their employees, or anyone else with respect to the conditions of the premises, except only for a condition caused directly and solely by the negligence of

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### § 3.14 Cutting and Patching

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

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

### § 3.15 Cleaning Up

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

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor and may deduct all costs thereof from any payment due the Contractor.

### § 3.16 Access to Work

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

### § 3.17 Royalties, Patents and Copyrights

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

### § 3.18 Indemnification

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

§ 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 The obligations of the Contractor under this paragraph 3.18 shall not extend to the liability of the Architect, the Architect's consultants, and agents or employees of any of them arising out of (1) the preparation of maps, Drawings, opinions, reports, surveys, Change Orders, designs or Specifications, or (2) directions or instructions given by the Architect, the Architect's consultants and agents or employees of any of them, provided such instructions or directions are the primary cause of the injury or damage.

§ 3.18.4 The Owner and the Architect have acknowledged that nothing in the Architect's engagement implies any undertaking by the Architect for the benefit of or which may be enforced by the Contractor, its Subcontractors, or the surety of any of them; it being understood that the Architect's obligations are to the Owner and that, in performing such obligations, the Architect may increase the burdens and expense of the Contractor, its Subcontractors or the surety of any of them. Neither the Contractor, any Subcontractor, nor the surety of any of them shall bring any civil suit or other legal action against the Architect arising out of or in connection with the Project.

## ARTICLE 4 ARCHITECT

### § 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

### § 4.2 Administration of the Contract

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

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

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

### § 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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

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22

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§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

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

§ 4.2.10 Not Used

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings.

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

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

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 Definitions

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

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract

Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

**§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work**

**§ 5.2.1** Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review.

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

**§ 5.2.3** If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. No increase in the Contract Sum or Contract Time shall be allowed for such change.

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

**§ 5.3 Subcontractual Relations**

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

**§ 5.4 Contingent Assignment of Subcontracts**

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

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Article 14 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor;
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the

Contract; and  
(Paragraph Deleted)

- .3 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 term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the

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24

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Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract.

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

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

§ 6.1.4 The Owner reserves the right to enter any part of the Project site at any time to inspect the Work or to perform other work with its own forces or separate contractors, or to address any emergency situation. Such access is not to be construed to mean partial occupancy by the Owner and no claim for increase in the Contract Time or Sum will be considered unless such Owner's contractors have delayed or damaged the Contractor's Work. The Contractor shall permit the Owner to place and install as much furniture, equipment and other material during the progress of the Work as is possible before completion of the various parts of the Work and agrees that such placing and installation of equipment shall not in any way evidence the completion or acceptance of the Work or any portion of it.

#### § 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

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

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

*(Paragraph Deleted)*

#### § 6.3 Owner's Right to Clean Up

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

### ARTICLE 7 CHANGES IN THE WORK

#### § 7.1 General

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

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**§ 7.1.2** A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

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

## **§ 7.2 Change Orders**

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

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

**§ 7.2.2** Upon request of the Owner or the Architect, the Contractor shall without cost to the Owner submit to the Architect, in such form as the Architect may require, an accurate written estimate of the cost of any proposed extra Work or change. The estimate shall indicate the quantity and unit cost of each item of material, and the number of hours of work and hourly rate for each class of labor, as well as a description and the amounts of all other costs chargeable under the terms of this Article. Unit labor costs for the installation of each item of material shall be shown if required by the Architect. The Contractor shall promptly revise and resubmit each estimate if the Architect determines that it is not in compliance with the requirements of this Article, or that it contains errors of fact or mathematical errors. If required by the Architect, in order to establish the exact cost of new Work added or of previously required Work omitted, the Contractor shall obtain and furnish to the Architect bona fide proposals from recognized suppliers for furnishing any material included in such Work. Such estimates shall be furnished promptly so as to occasion no delay in the Work, and shall be furnished at the Contractor's expense. The Contractor shall state in the estimate any extension of time required for the completion of the Work if the change or extra work is ordered.

## **§ 7.3 Construction Change Directives**

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

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

**§ 7.3.3** If the Construction Change Directive provides for an adjustment to the Contract Sum, and if the Contract Documents include a unit price for the work that is the subject of such directive, such unit price shall be the basis of the adjustment to the Contract Sum, unless the Owner, in its sole discretion, chooses another method. If, however, the Contract Documents do not include a unit price for such work, the adjustment shall be based on one of the following methods, as selected by the Owner:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

**§ 7.3.4** If the proposed method of adjustment in the Contract Sum is based on unit prices that are stated in the Contract Documents, such unit prices shall be the basis of any adjustment to the Contract Sum, unless the Owner has chosen another method pursuant to subparagraph 7.3.3. If the proposed method of adjustment is not based on such unit prices and the Contractor objects to the proposed method of

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adjustment, the Contractor must notify the Architect of such objection in writing within five (5) calendar days from Contractor's receipt of the Construction Change Directive. Failure to so object will irrevocably waive any such objections and claims on account of such method of adjustment, and the Construction Change Directive shall be deemed and shall constitute a Change Order. If the Contractor does so object, the adjustment to the Contract Sum shall be determined by the Architect 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 allowance for overhead and profit in accordance with the Clauses 7.3.11.1 through 7.3.11.6 below.

In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds, insurance and permit fees directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

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

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

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

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner amounts for such changes in the Work shall not be included in Applications for Payment. Such amounts shall only be included in an Application for Payment after the adjustment for the Construction Change Directive has been included in a Change Order signed by the Owner and the Contractor. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

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

§ 7.3.11 The allowance for the combined overhead and profit is to be as listed below.

- .1 For the Contractor, for Work performed by the Contractor's own forces, 10 percent of the cost.
- .2 For the Contractor, for Work performed by the Contractor's Subcontractor, 5 percent of the amount due the Subcontractor.
- .3 For each Subcontractor involved, for Work performed by that Subcontractor's own forces, 10 percent of the

cost.

- .4 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.4.
- .5 Overhead and profit is to include the Contractor's project management and supervisory costs, all administrative expenses and personnel, change estimate preparation, mobilization, setup & break-down, meetings, all safety related costs, cleanup costs and storage costs pertaining to the changes in the work.
- .6 The fee increase to any permit required by the additional work is allowed to be added to the Change Order costs. However, the Contractor is required to submit proof that the additional fee was paid to the presiding authority.
- .7 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$500.00 be approved without such itemization.

#### **§ 7.4 Minor Changes in the Work**

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

### **ARTICLE 8 TIME**

#### **§ 8.1 Definitions**

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

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

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

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

#### **§ 8.2 Progress and Completion**

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

§ 8.2.4 Unless specifically required by law, no payment under this Contract shall be due until the construction schedule, required by Section 3.10, and conforming to the requirements of the General Requirements has been accepted by the Architect.

§ 8.2.5 If the Architect in reviewing any Application for Payment determines that the amount of completed Work in place as certified by the Architect is less than 90% of the Work in place required by the Contractor's construction schedule or schedule of values provided for in Section 9.2, or that there have been delays to critical paths and the Contract completion date will not be met, or that, in the Owner's sole discretion, there is reasonable concern that the Work will not be Substantially Complete by the date required in the Contract Documents, the Contractor shall be required to submit a recovery schedule with a written description of the steps the Contractor intends to take to put

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the Project back on schedule. At the Owner's option, the Contractor shall take some or all of the following actions at no additional cost to the Owner:

- .1 Increase the number of workers on the site, in such quantities and trades as will substantially eliminate the backlog of work;
- .2 Increase the number of working hours per shift, shifts per day, working days per week, amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate backlog of work; or
- .3 Reschedule activities so that the completion dates initially scheduled will be met.

§ 8.2.6 If the Architect has determined that the Contractor should be permitted to extend the time for completion as provided in paragraph 8.3, the calendar dates in the Progress Schedule shall be adjusted accordingly to retain their same relationship to the adjusted date of Substantial Completion, and the dollar value of Work to be completed as of the first of each month shall be adjusted prorata.

§ 8.2.7 If the Contractor fails to submit any Application for Payment in any month, the Architect shall, for the purpose of this evaluation of progress, certify separately to the actual value of the Work in place completed as of the first of the month to the best of the Architect's knowledge.

§ 8.2.8 Nothing herein shall limit the Owner's right to liquidated or other damages for delays by the Contractor or to any other remedy which the Owner may possess under other provisions of the Contract Documents or by law.

### § 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine, and this shall be the Contractor's sole remedy for such delay. Under no circumstances will the Contractor be entitled to an increase in the Contract Sum, or to any other damages, on account of or in connection with any delay, regardless of the cause of such delay, and Contractor agrees not to make any claim for such damages, including, but not limited, claims for damages on account of having to perform out-of-sequence work, claims for damages on account of loss of production, and claims for damages on account of hindrances or interference with the work.

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

§ 8.3.3 No extension of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at the risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or conditions resulting therefrom.

§ 8.3.4 The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Architect on account of any delay in the commencement of the Work and/or any hindrance, delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Architect, or otherwise. The Contractor acknowledges that the Contractor's sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

### § 8.4 Liquidated Damages

§ 8.4.1 It is expressly understood and agreed, by and between the Contractor and Owner, that the time for the completion of the Work described herein is a reasonable time for the completion of same, taking into consideration the average climatic range and usual industrial and/or residential conditions prevailing in this locality. If the said Contractor shall neglect, fail or refuse to complete the Work within the times herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner the amount stipulated in these Contract Documents, not as a penalty but as liquidated damages for such breach of contract, for each and every calendar day that the Contractor shall be in default after the time stipulated for completing the Work. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and difficulty of fixing and ascertaining the actual

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damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be deducted by the Owner from periodic payments.

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 Contract Sum

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

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

### § 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment, and shall be revised if later found by the Architect to be inaccurate. In addition, the Contractor shall submit to the Architect, at least 14 days before the first Application for Payment, a Cash Flow Schedule that shows the percentage completion to be obtained and the total dollar value of Work to be completed as of the first of each month until Substantial Completion. All calculations in the Cash Flow Schedule shall be on the basis of Work in place and shall exclude the value of materials delivered but not in place.

§ 9.2.1 The Cash Flow Schedule shall be based on an orderly progression of the Work allowing adequate time for each operation (including adequate time for submission and review of submittals) and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The Cash Flow Schedule will be reviewed by the Architect for compliance with the requirements of the Contract Documents. Unless specifically required by law, no payment under this Contract shall be due until the Cash Flow Schedule has been reviewed and approved by the Architect. The Architect's review of the Cash Flow Schedule shall not impose any duty on the Architect or the Owner with respect to the timing, planning, scheduling or execution of the Work. In particular if the Contractor proposes a Cash Flow Schedule indicating a date of Substantial Completion which is earlier than the Contract Time the Contractor shall not be entitled to additional payment or compensation of any kind if for any reason the full Contract Time is required to achieve Substantial Completion of the Work.

### § 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents. The form of Application for Payment shall be a notarized AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet.

§ 9.3.1.1 Each Application for Payment or periodic estimate requesting payment shall be accompanied at the owner's option by (1) a waiver of liens from each Subcontractor or (ii) a certificate from each Subcontractor stating that the Subcontractor has been paid all amounts due the Subcontractor on the basis of the previous periodic payment to the Contractor, or else stating the amount not so paid and the reason for the discrepancy. In the event of any such discrepancy, the Contractor shall furnish the Contractor's own written explanation to the Owner through the Architect. Such waiver or certificate shall be in a form acceptable to the Owner.

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

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

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

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

**§ 9.4.1** Subject to the Contractor's compliance with Section 9.3 and the provisions of Section 9.6, the Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

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

#### **§ 9.5 Decisions to Withhold Certification**

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

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;

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- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the retainage currently held by the Owner would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.
- .8 failure of the Contractor or mechanical or electrical trade subcontractors to comply with requirements of the General Requirements for maintaining record drawings. The Contractor shall check record drawings each month. Written confirmation that the record drawings are current will be required by the Architect before approval of the Contractor's monthly payment requisition;
- .9 failure of the Contractor to provide required warranties under Section 9.3, claims for direct payment, or reasonable evidence indicating probable filing of such claims;
- .10 costs incurred by the Owner under Section 10.2.5;
- .11 failure of the Contractor to submit prerequisite documentation required by the General Requirements; or
- .12 liquidated damages due the Owner pursuant to Section 8.4.

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

§ 9.5.3 Not Used

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

#### § 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect. The Owner reserves the right to withhold payment to the Contractor, in whole or in part, for any or all of the reasons cited in Clauses 9.5.1.1 through 9.5.1.12.

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

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

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. The Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 Not Used

§ 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

Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

### § 9.7 Not Used

*(Paragraph Deleted)*

### § 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.

In addition, Substantial Completion for the entire Project shall be achieved only when:

- .1 the Owner has beneficial occupancy and use of the entire Project for all its intended uses;
- .2 all Project systems included in the Work are operational and acceptable to the Owner;
- .3 all governmental inspections for the Project have been successfully completed, all governmental approvals and related paperwork have been delivered to the Owner, and final and unconditional certificates of occupancy for the entire Project have been delivered to the Owner,
- .4 the only remaining Work to be performed is minor in nature and the remaining Work may reasonably be performed without having a material adverse effect on or materially interfering with the Owner's occupancy and use of the Project and
- .5 all prerequisites to Substantial Completion defined in the Contract Documents have been completed.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment together with the estimated value of completing or correcting such items (the "Punchlist") and (2) the permits and certificates referenced in Section 13.5. The Architect shall have the right to modify and supplement the Punchlist, including the estimated value of completion or correction.

Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

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

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor by the Architect. The certificate shall state the date of substantial completion, shall state any consequent responsibilities of the



Contractor and the Owner in accordance with the Contract Documents. The Contractor shall complete and correct any incomplete and defective work within the number of calendar days stipulated in these Contract Documents.

**§ 9.8.6** Services provided by the Architect to conduct more than three (3) inspections of completed Work or any inspections beyond thirty (30) calendar days after the date of substantial completion of any portion of the Work as stated in the Agreement shall be paid by the Contractor to the Owner. The Owner may deduct the cost of such services and inspections from payments due the Contractor.

**§ 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. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner has accepted in writing the responsibilities assigned to it and the Contractor for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

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

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

**§ 9.10 Final Completion and Final Payment**

**§ 9.10.1** Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. By Final Completion, the Contractor shall have completed its performance of all Punchlist items, completed all balancing of mechanical and other applicable systems and all seasonal system adjustments that are reasonably necessary to proper functioning of the completed Project, delivered to the Owner all operations and maintenance manuals and completed related training for such manuals, and delivered to the Owner all required warranties and guarantees.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If the Contractor fails to furnish such releases or waivers as the Owner reasonably requires to satisfy the Owner that there are no outstanding liens, the Owner may require the Contractor, as a condition of final payment and at the Contractor's expense, to furnish a bond satisfactory to the Owner to indemnify the Owner against any such liens.  
(Paragraphs Deleted)

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§ 9.10.3 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee for payment for Work performed and of all other claims of which the payee knew or should have known at the time of final payment, except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 Safety Precautions and Programs

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

### § 10.2 Safety of Persons and Property

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

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor;
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and
- .4 work or property of the Owner, its tenants, or other parties at or near the Project site with the Owner's permission.

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

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

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

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18. Where the damage or loss presents an immediate danger to the public, the Owner, in its sole discretion and at the Contractor's expense, may promptly remedy such damage or loss without prior notice to the Contractor.

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

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

### § 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

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**10.2.9** The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.

§ **10.2.10** The Contractor shall at all times protect excavations, trenches, buildings and materials from rain water, groundwater, backup or leakage of sewers, drains and other piping, and from water of any other origin and shall remove promptly any accumulation of water. The Contractor shall provide and operate all pumps, piping and other equipment necessary to this end.

§ **10.2.11** The Contractor shall remove snow and ice which might result in damage or delay.

§ **10.2.12** During the progress of the Work and at all times prior to the date of Substantial Completion or occupancy of the Work by the Owner, whichever is earlier, the Contractor shall provide temporary heat, ventilation, and enclosure, adequate to permit the Work to proceed in a timely fashion, and to prevent damage to completed Work or Work in progress, or to materials stored on the premises. The use of the permanent heating and/or ventilation systems for temporary heat and/or ventilation shall be subject to the prior written approval of the Owner and Architect.

§ **10.2.13** The Contractor shall install weather protection and furnish adequate heat in the protected area from November 1 to March 31 as necessary.

### § 10.3 Hazardous Materials and Substances

§ **10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. The Contractor shall not cause or permit any introduction onto, under, or near the Owner's property of any hazardous materials or substances as defined by any applicable law, and shall not cause or permit any release, discharge, transportation, storage, or disposal of such materials or substances onto, under, or near the Owner's property or areas near the Owner's property. If the Contractor encounters or recognizes on the site any material known or reasonably believed to be hazardous, including but not limited to asbestos or polychlorinated biphenyl (PCB), the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and Architect in writing. The Contractor and the Owner shall cooperate in implementing measures to remove or contain said material and the Contractor shall comply with all directions of the Architect in the implementation of such removal or containment.

§ **10.3.2** The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Article 10 or for any violation of applicable law related to the Contractor's noncompliance with the provisions of this Article 10.

§ **10.3.3** The parties anticipate that certain hazardous substances and/or materials may be discovered at the site. When such conditions are set forth in the Contract Documents, the Contractor acknowledges that such conditions have been considered in establishing the Contract Time and Contract Sum. No extension of the Contract Time or increase in the Contract Sum shall be claimed or allowed with respect to any hazardous substances or materials located at the site which were disclosed in the Contract Documents. The Contractor shall strictly comply with all laws, regulations, rules, orders, ordinances and the like related to the excavation, storage, removal and disposal of any such hazardous substances or materials.

### § 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.

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## 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 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.

§ 11.1.2 The insurance required by Section 11.1.1 shall include all major divisions of coverage, and shall be on a comprehensive general basis including Premises and Operations (including X-C-U), Owner's and Contractor's Protective, Products and Completed Operations, and Owned, Non-owned, and Hired Motor Vehicles. Such insurance shall be written for not less than any limits of liability required by law or those set forth in the Contract Documents, whichever is greater.

*(Paragraph Deleted)*

All insurance shall be written on an occurrence basis, unless the Owner approves in writing coverage on a claims-made basis. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and any further period during which coverage is required to be maintained after final payment by the Contract Documents. The Owner shall be named an Additional Insured on all policies.

Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the Owner and authorized to do business in the state the project is located. Contractor shall furnish to Owner written confirmation as to the insurance carrier's most current financial ratings prior to commencing work.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner 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 days' prior written notice has been given to the Owner. 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.

These certificates shall set forth evidence of all coverage required by Sections 11.1.1 and 11.1.2. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending limits of coverage.

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§ 11.1.3.1 The Contractor shall be responsible for having acceptable insurance coverage provided by or on behalf of all Subcontractors, with such insurance to be similar to that required of the Contractor under the Agreement and these General Conditions. The Contractor shall not allow any Subcontractor to commence Work on the Project prior to the Contractor's receipt of certificates of insurance that are acceptable in form and limits to the Owner; the Owner shall have no obligation to pay the Contractor for any Work performed by a Subcontractor who has not supplied acceptable insurance certificates prior to starting its Work.

The Owner shall be named an additional insured on all such certificates.

§ 11.1.3.2 All insurance policies shall contain provisions or endorsements necessary to assure coverage of claims by one insured against another. All required insurance policies are to be endorsed to state that the Contractor's policies shall be primary to all other insurance available to the Owner and other specified additional insureds for liability arising out of or resulting from the Contractor's operations under the Contract, 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.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Owner's Project Manager, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.1.5 In no case shall the limits of liability be less than the following:

.1 General Liability of at least \$1,000,000 Bodily Injury and Property Damage Liability, Combined Single Limit with a \$3,000,000 Annual Aggregate Limit. Products and Completed Operations is to be maintained for up to 3 years after the completion of the project.

.2 Automobile Liability (applicable for any contractor who has an automobile operating exposure) of at least \$1,000,000 Bodily Injury and Property Damage per accident.

.3 Workers' Compensation Insurance as required by law.

.4 Property Coverage for materials and supplies being transported by the contractor, as the City's Property Contract provides coverage for personal property within 1000 feet of the premises.

.6 Umbrella Liability of at least \$2,000,000/ occurrence, \$2,000,000/aggregate.

§ 11.2 OWNER'S LIABILITY INSURANCE The Contractor shall procure and pay for an Owner's policy of Owner's protective liability insurance insuring the Owner and its officers, employees and agents against claims which may arise from operations under the Contract or relating thereto.

### § 11.3 PROPERTY INSURANCE

§ 11.3.1 The Contractor shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the Owner. Contractor shall furnish to Owner written confirmation as to the insurance carrier's most current financial ratings prior to commencing work. Such insurance shall include the interests of the Owner, the

Contractor, Subcontractors and Sub-subcontractors in the work and shall insure against the perils of fire and extended coverage and shall include "all risks" insurance for physical loss or damage including without duplication, theft, vandalism and malicious mischief. This insurance shall also cover portions of the Work stored off the site or in transit. If this insurance is written with stipulated amounts deductible, the Owner shall not be responsible for any difference between the payments made by the insurance carrier and the claim. The

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policy shall contain a provision that coverages afforded under policies will not be canceled or allowed to expire until at least 30 days' written notice has been given to the Owner. The Owner shall be named insured within the policy.

§ 11.3.2 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.

§ 11.3.3 The Owner shall have the power to adjust and settle with its insurers any loss for which it has obtained insurance.

Upon the occurrence of an insured loss, the Owner and the Contractor shall cooperate with each other and with each other's insurer in the submission of claims and related information and the distribution of any insurance proceeds. If after such a loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate change order.

#### § 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder, each in the amount of 100% of the Contract Price, and each by a surety company qualified to do business under the laws of the State of Rhode Island and acceptable to the Owner. The attorney-in-fact who signs the bonds on behalf of the surety, must affix to each bond a certified and current copy of the power of attorney. The Performance and Payment Bonds shall be written in a form satisfactory to the Owner.

§ 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 Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

#### § 12.2 Correction of Work

##### § 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense. The Contractor shall bear the cost of any loss or damages to the Owner resulting from such failure or defect.

##### § 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5. If the correction or repair of any of the Work is required to avoid impacts to the maintenance, operation or safety of any

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portion of the Project site or the Owner's property, the Owner reserves the right to undertake the repairs prior to notifying the Contractor or without waiting for the Contractor to respond, without waiving the Owner's rights under the warranties and the Owner's right to correct work under Section 2.5.

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

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

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

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

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

**§ 12.3 Acceptance of Nonconforming Work**

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

**ARTICLE 13 MISCELLANEOUS PROVISIONS**

**§ 13.1 Governing Law**

The Contract shall be governed by the laws of the State of Rhode Island. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

**§ 13.2 Successors and Assigns**

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

*(Paragraph Deleted)*

**§ 13.3 Rights and Remedies**

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

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

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### § 13.4 Tests and Inspections

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

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 The Contractor shall obtain and deliver promptly to the Architect any occupancy permit and any certificates of final inspection of any part of the Contractor's work and operating permits for any mechanical apparatus, such as elevators, escalators, boilers, air compressors, etc., which may be required by law to permit full use and occupancy of the premises by the Owner. Receipt of such permits or certificates by the Architect shall be a condition precedent to Substantial Completion of the Work.

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

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

### § 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.6 It is expressly agreed that the obligations of the Contractor hereunder arise out of contractual duties, and that the failure of the Contractor to comply with the requirements of the Contract Documents shall constitute a breach of contract, not a tort, for the purpose of applicable statutes of limitation and repose. Any cause of action which the Owner may have on account of such failure shall be deemed to accrue only when the Owner has obtained actual knowledge of such failure, not before.

### § 13.7 LIMITATION OF LIABILITY

§ 13.7.1 The Owner shall be liable, if ever, only to the extent of its interest in the Project; and no officer, director, partner, agent or employee of the Owner shall ever be personally or individually liable with respect to this Contract or the Work. Each Subcontract shall include the foregoing limitation, which shall be effective if the Owner ever succeeds to the Contractor's rights and obligations under a Subcontract.

### § 13.8 DEFENSE OF SUITS

§ 13.8.1 The Contractor shall be responsible for, shall defend and pay all costs, attorneys' fees and liabilities both direct and indirect as a result of suits arising out of this Contract.

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§ 13.8.2 Neither final acceptance nor occupation of the premises by the Owner shall relieve the Contractor of responsibility for all claims for labor, materials, and equipment arising out of this Contract.

§ 13.8.3 The Contractor shall indemnify and hold harmless the Owner and the Architect and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the work.

#### § 13.9 EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS

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

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

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

§ 13.9.1.3 The Contractor shall be a signatory to the requirements of the Rhode Island Equal Employment Office.

#### § 13.10 PREVAILING WAGES SCALES ON PUBLIC WORKS PROJECTS

§ 13.10.1. In accordance with Chapter 290 of the General laws of Rhode Island, 1938, as amended, the Department of Labor determined the customary and prevailing rate of wages paid to craftspersons, teamsters, and laborers in the constructing of public works by the State, and by cities and towns, and by persons contracting therewith for such construction. Violators are subject to a fine of not more than One Hundred Dollars (\$100.00) for each offense.

§ 13.10.2 The wage rates as ascertained by the Department of Labor are uniform for the State of Rhode Island and as of the date of advertisement of Contract applying to the life of this Contract. Information concerning wage rates prevailing in the construction industry in Rhode Island may be obtained from the Division of Professional Regulation, Department of Labor and Training, 1511 Pontiac Avenue, Cranston, Rhode Island, 02920 or their website [www.dlt.state.ri.us](http://www.dlt.state.ri.us).

Under no condition shall the wages paid to be less than those designated in the general classification. This clause does not relieve the Contractor or his Subcontractors from respecting any other union regulations to which he ordinarily subscribes.

§ 13.10.3 Bulletin No. 3, State Labor Laws, issued by the Rhode Island Department of Labor, pertaining to Public Works Projects (General Laws of Rhode Island, Revision of 1956, Chapter 37-12 as amended, and Chapter 77, Public Laws of 1965), is hereby made as part of this Project. These laws include, but are not limited to:

1. weekly payment of employees;
2. provisions applicable to public works contracts;
3. payment of prevailing wage rates;
4. posting of prevailing wage rates; and
5. overtime compensation.

#### § 13.11 MINORITY BUSINESS REQUIREMENTS

It is the policy of the Owner to support the fullest possible participation of firms owned and controlled by minorities (MBEs) and women (WBEs).

See additional information and instructions in the preceding documents of this Project Manual.

### ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

#### § 14.1 Termination by the Contractor

§ 14.1.1 Provided that the Contractor is not in breach of any of its obligations under the Contract, the Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the

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Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work

(Paragraph Deleted)

because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents.

(Paragraph Deleted)

**§ 14.1.2 Not Used**

**§ 14.1.3** If one of the above reasons exists, the Contractor may, upon seven days written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed and for all materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. The payment for materials or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to the Owner to establish the Owner's title to such material or equipment or otherwise protect the Owner's interest.

**§ 14.2 Termination by the Owner for Cause**

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

- .1 refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;
- .4 becomes the subject of a voluntary petition in bankruptcy or any voluntary proceeding related to insolvency, receivership, liquidation or comparable proceeding or any assignment for the benefit of creditors or becomes the subject of an involuntary petition in bankruptcy or any involuntary proceeding related to insolvency, receivership, liquidation or comparable proceeding or any assignment for the benefit of creditors;
- .5 submits three successive Applications for Payment, each of which indicate that the actual Work completed is less than 90 percent of the values estimated in the construction schedule (submitted by the Contractor pursuant to Section 3.10.1) to be completed by the respective dates; or
- .6 otherwise is guilty of substantial breach of a provision of the Contract Documents.

**§ 14.2.2** When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient.

**§ 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 all costs and losses incurred by the Owner on account of the Contractor's failure to comply with the Contract Documents and compensation for the Architect's and Owner's Project Manager'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 Owner shall be entitled to hold all amounts due the Contractor at the date of termination until all of the Owner's damages have been established, and to apply such amounts to such damages.

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**§ 14.3 Suspension by the Owner for Convenience**

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

**§ 14.3.2** The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1, subject to compliance with the conditions of Section 8.3. No adjustment shall be made to the extent

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

**§ 14.4 Termination by the Owner for Convenience**

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

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

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

**§ 14.4.3** In the event that the Contract is terminated for the Owner's convenience, the Contractor shall be reimbursed in accordance with the Contract Documents for all Work properly performed up to the termination date, and for all materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. Payment for materials or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to the Owner to establish the Owner's title to such material or equipment or otherwise protect the Owner's interest. The Contractor shall not be entitled to payment for overhead and profit on the Work not executed.

**ARTICLE 15 CLAIMS AND DISPUTES**

**§ 15.1 Claims**

**§ 15.1.1 Definition**

The word "Claim" shall mean a written demand by the Contractor for an increase in the Contract Time or the Contract Sum. The Contractor is responsible for substantiating its Claims. The word "Claim" shall not include claims by the Owner. The Owner may withhold from the  
*(Paragraph Deleted)*

Contractor the value of any claims against the Contractor.

**§ 15.1.2 Notice of Claims**

Contractor must initiate Claims within fourteen (14) calendar days after occurrence of the event giving rise to such Claim by written notice to the Architect and the Owner. Such written notice must (1) be signed by the Contractor; (2) conspicuously identify on its face that the notice serves as a notice of claim; (3) explain in sufficient detail the basis of the Claim; (4) identify the date of the event giving rise to such Claim; and (5) state the exact dollar amount of the increase in the Contract Sum being requested, if any, and the number of days extension to the Contract Time sought, if any.

**§ 15.1.3 Not Used**

**§ 15.1.4 Continuing Contract Performance**

**§ 15.1.4.1** Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

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**§ 15.1.4.2** The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

**§ 15.1.5 Claims for Additional Cost**

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

**§ 15.1.6 Claims for Additional Time**

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

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

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

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

**§ 15.2 Initial Decision**

**§ 15.2.1** Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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

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

**§ 15.2.4** If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a

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response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

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

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

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

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

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

### **§ 15.3 Mediation**

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

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

**§ 15.3.3** Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

**§ 15.3.4** The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

### **§ 15.4 Arbitration**

**§ 15.4.1** If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be

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made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

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

**§ 15.4.4 Consolidation or Joinder**

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

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DOCUMENT 00 73 46

PREVAILING WAGE RATES

The State of Rhode Island Department of Labor, Division of Professional Regulation General Decision Modification document, current as of the bid issuance date for this Project, is an integral part of the Bid Documents for use in fulfilling prevailing wage rate requirements. A copy is included following this page.

Additional information concerning prevailing wage rates may be obtained from the Rhode Island Division of Professional Regulation, Department of Labor and Training, 1511 Pontiac Avenue, Cranston, Rhode Island, 02920.

"General Decision Number: RI20230001 09/01/2023

Superseded General Decision Number: RI20220001

State: Rhode Island

Construction Types: Building, Heavy (Heavy and Marine) and Highway

Counties: Rhode Island Statewide.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories) HEAVY, HIGHWAY AND MARINE CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered	. Executive Order 14026	
into on or after January 30,	generally applies to the	
2022, or the contract is	contract.	
renewed or extended (e.g., an	. The contractor must pay	
option is exercised) on or	all covered workers at	
after January 30, 2022:	least \$16.20 per hour (or	
	the applicable wage rate	
	listed on this wage	
	determination, if it is	
	higher) for all hours	
	spent performing on the	
	contract in 2023.	



**Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island**

**Renovations  
Job No. 21041**

If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.
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The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	01/13/2023
2	02/03/2023
3	03/17/2023
4	04/14/2023
5	05/12/2023
6	06/02/2023
7	06/16/2023
8	06/30/2023
9	08/25/2023
10	09/01/2023

ASBE0006-006 06/01/2023

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER (Includes preparation, wetting, stripping, removal scrapping, vacuuming, bagging & disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems).....	\$ 39.80	26.05

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

ASBE0006-008 09/01/2021

	Rates	Fringes
Asbestos Worker/Insulator Includes application of all insulating materials, protective coverings, coatings & finishes to all types of mechanical systems.	\$ 45.00	32.89

BOIL0029-001 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 45.87	29.02

BRR10003-001 06/01/2022

	Rates	Fringes
Bricklayer, Stonemason, Pointer, Caulker & Cleaner.....	\$ 46.86	29.14

BRR10003-002 09/01/2022

	Rates	Fringes
Marble Setter, Terrazzo Worker & Tile Setter.....	\$ 46.54	30.34

BRR10003-003 09/01/2022

	Rates	Fringes
Marble, Tile & Terrazzo Finisher.....	\$ 38.78	29.61

CARP0330-001 06/05/2023

	Rates	Fringes
CARPENTER (Includes Soft Floor Layer).....	\$ 42.78	30.00
Diver Tender.....	\$ 43.78	30.00
DIVER.....	\$ 55.93	30.00
Piledriver.....	\$ 41.53	29.35
WELDER.....	\$ 43.78	30.00

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

FOOTNOTES:

When not diving or tending the diver, the diver and diver tender shall receive the piledriver rate. Diver tenders shall receive \$1.00 per hour above the pile driver rate when tending the diver.

Work on free-standing stacks, concrete silos & public utility electrical power houses, which are over 35 ft. in height when constructed: \$.50 per hour additional.

Work on exterior concrete shear wall gang forms, 45 ft. or more above ground elevation or on setback: \$.50 per hour additional.

The designated piledriver, known as the "monkey": \$1.00 per hour additional.

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 CARP1121-002 01/02/2023

	Rates	Fringes
MILLWRIGHT.....	\$ 41.54	30.73

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 ELEC0099-002 06/01/2023

	Rates	Fringes
ELECTRICIAN.....	\$ 48.61	50.44%
Teledata System Installer.....	\$ 36.46	11.59%+15.31

FOOTNOTES:

Work of a hazardous nature, or where the work height is 30 ft. or more from the floor, except when working OSHA-approved lifts: 20% per hour additional.

Work in tunnels below ground level in combined sewer outfall: 20% per hour additional.

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 ELEV0039-001 01/01/2023

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 59.36	37.335+a+b

FOOTNOTES:

**Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island**

**Renovations  
Job No. 21041**

a. PAID HOLIDAYS: New Years Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

b. Employer contributes 8% basic hourly rate for 5 years or more of service of 6% basic hourly rate for 6 months to 5 years of service as vacation pay credit.

ENGI0057-001 06/01/2023

	Rates	Fringes
Operating Engineer: (power plants, sewer treatment plants, pumping stations, tunnels, caissons, piers, docks, bridges, wind turbines, subterranean & other marine and heavy construction work)		
GROUP 1.....	\$ 45.55	29.45
GROUP 2.....	\$ 43.55	29.45
GROUP 3.....	\$ 39.17	29.45
GROUP 4.....	\$ 36.32	29.45
GROUP 5.....	\$ 42.60	29.45
GROUP 6.....	\$ 33.40	29.45
GROUP 7.....	\$ 27.40	29.45
GROUP 8.....	\$ 39.25	29.45
GROUP 9.....	\$ 43.17	29.45

a. BOOM LENGTHS, INCLUDING JIBS:

- 150 feet and over + \$ 2.00
- 180 feet and over + \$ 3.00
- 210 feet and over + \$ 4.00
- 240 feet and over + \$ 5.00
- 270 feet and over + \$ 7.00
- 300 feet and over + \$ 8.00
- 350 feet and over + \$ 9.00
- 400 feet and over + \$10.00

a. PAID HOLIDAYS:

New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. a: Any employee who works 3 days in the week in which a holiday falls shall be paid for the holiday.

a. FOOTNOTES:

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

Hazmat work: \$2.00 per hour additional.  
 Tunnel/Shaft work: \$5.00 per hour additional.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, lighters, boom trucks and derricks

GROUP 2: Digging machine, Ross Carrier, locomotive, hoist, elevator, bidwell-type machine, shot & water blasting machine, paver, spreader, graders, front end loader (3 yds. and over), vibratory hammer & vacuum truck, roadheaders, forklifts, economobile type equipment, tunnel boring machines, concrete pump and on site concrete plants.

GROUP 3: Oilers on cranes.

GROUP 4: Oiler on crawler backhoe.

GROUP 5: Bulldozer, bobcats, skid steer loader, tractor, scraper, combination loader backhoe, roller, front end loader (less than 3 yds.), street and mobile-powered sweeper (3-yd. capacity), 8-ft. sweeper minimum 65 HP).

GROUP 6: Well-point installation crew.

GROUP 7: Utility Engineers and Signal Persons

GROUP 8: Heater, concrete mixer, stone crusher, welding machine, generator and light plant, gas and electric driven pump and air compressor.

GROUP 9: Boat & tug operator.

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 ENGI0057-002 05/01/2023

	Rates	Fringes
Power Equipment Operator (highway construction projects; water and sewerline projects which are incidental to highway construction projects; and bridge projects that do not span water)		
GROUP 1.....	\$ 40.70	29.25
GROUP 2.....	\$ 33.40	29.25
GROUP 3.....	\$ 20.00	29.25
GROUP 4.....	\$ 33.98	29.25
GROUP 5.....	\$ 37.68	29.25

**Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island**

**Renovations  
Job No. 21041**

GROUP 6.....	\$ 37.68	29.25
GROUP 7.....	\$ 32.95	29.25
GROUP 8.....	\$ 32.33	29.25
GROUP 9.....	\$ 34.28	29.25

a. FOOTNOTE: a. Any employee who works three days in the week in which a holiday falls shall be paid for the holiday.

a. PAID HOLIDAYS: New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day & Christmas Day.

**POWER EQUIPMENT OPERATOR CLASSIFICATIONS**

GROUP 1: Digging machine, crane, piledriver, lighter, locomotive, derrick, hoist, boom truck, John Henry's, directional drilling machine, cold planer, reclaimer, paver, spreader, grader, front end loader (3 yds. and over), vacuum truck, test boring machine operator, veemere saw, water blaster, hydro-demolition robot, forklift, economobile, Ross Carrier, concrete pump operator and boats

GROUP 2: Well point installation crew

GROUP 3: Utility engineers and signal persons

GROUP 4: Oiler on cranes

GROUP 5: Combination loader backhoe, front end loader (less than 3 yds.), forklift, bulldozers & scrapers and boats

GROUP 6: Roller, skid steer loaders, street sweeper

GROUP 7: Gas and electric drive heater, concrete mixer, light plant, welding machine, pump & compressor

GROUP 8: Stone crusher

GROUP 9: Mechanic & welder

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ENGI0057-003 06/01/2023

**BUILDING CONSTRUCTION**

	Rates	Fringes
Power Equipment Operator		
GROUP 1.....	\$ 44.82	29.90
GROUP 2.....	\$ 42.82	29.90

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

GROUP 3.....	\$ 42.60	29.90
GROUP 4.....	\$ 38.60	29.90
GROUP 5.....	\$ 35.75	29.90
GROUP 6.....	\$ 41.90	29.90
GROUP 7.....	\$ 41.47	29.90
GROUP 8.....	\$ 38.79	29.90

a. BOOM LENGTHS, INCLUDING JIBS:

- 150 ft. and over: + \$ 2.00
- 180 ft. and over: + \$ 3.00
- 210 ft. and over: + \$ 4.00
- 240 ft. and over: + \$ 5.00
- 270 ft. and over: + \$ 7.00
- 300 ft. and over: + \$ 8.00
- 350 ft. and over: + \$ 9.00
- 400 ft. and over: + \$10.00

a. PAID HOLIDAYS: New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day & Christmas Day. a: Any employee who works 3 days in the week in which a holiday falls shall be paid for the holiday.

- a. FOOTNOTE: Hazmat work: \$2.00 per hour additional.  
 Tunnel/Shaft work: \$5.00 per hour additional.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, lighters, boom trucks and derricks.

GROUP 2: Digging machine, Ross carrier, locomotive, hoist, elevator, bidwell-type machine, shot & water blasting machine, paver, spreader, front end loader (3 yds. and over), vibratory hammer and vacuum truck

GROUP 3: Telehandler equipment, forklift, concrete pump & on-site concrete plant

GROUP 4: Fireman & oiler on cranes

GROUP 5: Oiler on crawler backhoe

GROUP 6: Bulldozer, skid steer loaders, bobcats, tractor, grader, scraper, combination loader backhoe, roller, front end loader (less than 3 yds.), street and mobile powered sweeper (3 yds. capacity), 8-ft. sweeper (minimum 65 hp)

GROUP 7: Well point installation crew

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

GROUP 8: Heater, concrete mixer, stone crusher, welding machine, generator for light plant, gas and electric driven pump & air compressor

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 IRON0037-001 03/16/2023

	Rates	Fringes
IRONWORKER.....	\$ 39.50	32.08

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LABO0271-001 11/27/2022

BUILDING CONSTRUCTION

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 35.50	26.85
GROUP 2.....	\$ 35.75	26.85
GROUP 3.....	\$ 36.25	26.85
GROUP 4.....	\$ 36.50	26.85
GROUP 5.....	\$ 37.50	26.85

LABORERS CLASSIFICATIONS

GROUP 1: Laborer, Carpenter Tender, Mason Tender, Cement Finisher Tender, Scaffold Erector, Wrecking Laborer, Asbestos Removal [Non-Mechanical Systems]

GROUP 2: Asphalt Raker, Adzemen, Pipe Trench Bracer, Demolition Burner, Chain Saw Operator, Fence & Guard Rail Erector, Setter of Metal Forms for Roadways, Mortar Mixer, Pipelayer, Riprap & Dry Stonewall Builder, Highway Stone Spreader, Pneumatic Tool Operator, Wagon Drill Operator, Tree Trimmer, Barco-Type Jumping Tamper, Mechanical Grinder Operator

GROUP 3: Pre-Cast Floor & Roof Plank Erectors

GROUP 4: Air Track Operator, Hydraulic & Similar Self-Powered Drill, Block Paver, Rammer, Curb Setter, Powderman & Blaster

GROUP 5: Toxic Waste Remover

LABORERS CLASSIFICATIONS

GROUP 1: Laborer, Carpenter Tender, Mason Tender, Cement Finisher Tender, Scaffold Erector, Wrecking Laborer, Asbestos Removal [Non-Mechanical Systems]

GROUP 2: Asphalt Raker, Adzemen, Pipe Trench Bracer,



Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

Demolition Burner, Chain Saw Operator, Fence & Guard Rail Erector, Setter of Metal Forms for Roadways, Mortar Mixer, Pipelayer, Riprap & Dry Stonewall Builder, Highway Stone Spreader, Pneumatic Tool Operator, Wagon Drill Operator, Tree Trimmer, Barco-Type Jumping Tamper, Mechanical Grinder Operator

GROUP 3: Pre-Cast Floor & Roof Plank Erectors

GROUP 4: Air Track Operator, Hydraulic & Similar Self-Powered Drill, Block Paver, Rammer, Curb Setter, Powderman & Blaster

GROUP 5: Toxic Waste Remover

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 LABO0271-002 11/27/2022

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
LABORER		
COMPRESSED AIR		
Group 1.....	\$ 55.40	24.15
Group 2.....	\$ 52.93	24.15
Group 3.....	\$ 42.45	24.15
FREE AIR		
Group 1.....	\$ 44.05	24.15
Free Air		
Group 1.....	\$ 46.00	24.15
FREE AIR		
Group 2.....	\$ 43.05	24.15
Free Air		
Group 2.....	\$ 45.00	24.15
FREE AIR		
Group 3.....	\$ 40.50	24.15
Free Air		
Group 3.....	\$ 42.45	24.15
LABORER		
Group 1.....	\$ 35.50	24.85
Group 2.....	\$ 35.75	24.85
Group 3.....	\$ 36.50	24.85
Group 4.....	\$ 29.00	24.85
Group 5.....	\$ 37.50	24.85
OPEN AIR CAISSON, UNDERPINNING WORK AND BORING CREW		
Bottom Man.....	\$ 41.50	24.15
Top Man & Laborer.....	\$ 35.60	24.15
TEST BORING		

Museum of Natural History and Planetarium at Roger Williams Park  
 Providence, Rhode Island

Renovations  
 Job No. 21041

Driller.....	\$ 41.95	24.15
Laborer.....	\$ 41.95	24.15

LABORER CLASSIFICATIONS

GROUP 1: Laborer; Carpenter tender; Cement finisher tender;  
 Wrecking laborer; Asbestos removers [non-mechanical systems];  
 Plant laborer; Driller in quarries

GROUP 2: Adzperson; Asphalt raker; Barcotype jumping tamper;  
 Chain saw operators; Concrete and power buggy operator;  
 Concrete saw operator; Demolition burner; Fence and guard rail  
 erector; Highway stone spreader; Laser beam operator;  
 Mechanical grinder operator; Mason tender; Mortar mixer;  
 Pneumatic tool operator; Riprap and dry stonewall builder;  
 Scaffold erector; Setter of metal forms for roadways; Wagon  
 drill operator; Wood chipper operator; Pipelayer; Pipe trench  
 bracer

GROUP 3: Air track drill operator; Hydraulic and similar  
 powered drills; Brick paver; Block paver; Rammer and curb  
 setter; Powderperson and blaster

GROUP 4: Flagger & signaler

GROUP 5: Toxic waste remover

LABORER - COMPRESSED AIR CLASSIFICATIONS

GROUP 1: Mucking machine operator, tunnel laborer, brake  
 person, track person, miner, grout person, lock tender, gauge  
 tender, miner: motor person & all others in compressed air

GROUP 2: Change house attendant, powder watchperson, top  
 person on iron

GROUP 3: Hazardous waste work within the "HOT" zone

LABORER - FREE AIR CLASSIFICATIONS

GROUP 1: Grout person - pumps, brake person, track person,  
 form mover & stripper (wood & steel), shaft laborer, laborer  
 topside, outside motorperson, miner, conveyor operator, miner  
 welder, heading motorperson, erecting operator, mucking  
 machine operator, nozzle person, rodperson, safety miner,  
 shaft & tunnel, steel & rodperson, mole nipper, concrete  
 worker, form erector (wood, steel and all accessories), cement  
 finisher (this type of work only), top signal person, bottom  
 person (when heading is 50' from shaft), burner, shield  
 operator and TBM operator

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

GROUP 2: Change house attendant, powder watchperson

GROUP 3: Hazardous waste work within the "HOT" zone

LABORER CLASSIFICATIONS

GROUP 1: Laborer; Carpenter tender; Cement finisher tender; Wrecking laborer; Asbestos removers [non-mechanical systems]; Plant laborer; Driller in quarries

GROUP 2: Adzperson; Asphalt raker; Barcotype jumping tamper; Chain saw operators; Concrete and power buggy operator; Concrete saw operator; Demolition burner; Fence and guard rail erector; Highway stone spreader; Laser beam operator; Mechanical grinder operator; Mason tender; Mortar mixer; Pneumatic tool operator; Riprap and dry stonewall builder; Scaffold erector; Setter of metal forms for roadways; Wagon drill operator; Wood chipper operator; Pipelayer; Pipe trench bracer

GROUP 3: Air track drill operator; Hydraulic and similar powered drills; Brick paver; Block paver; Rammer and curb setter; Powderperson and blaster

GROUP 4: Flagger & signaler

GROUP 5: Toxic waste remover

LABORER - COMPRESSED AIR CLASSIFICATIONS

GROUP 1: Mucking machine operator, tunnel laborer, brake person, track person, miner, grout person, lock tender, gauge tender, miner: motor person & all others in compressed air

GROUP 2: Change house attendant, powder watchperson, top person on iron

GROUP 3: Hazardous waste work within the "HOT" zone

LABORER - FREE AIR CLASSIFICATIONS

GROUP 1: Grout person - pumps, brake person, track person, form mover & stripper (wood & steel), shaft laborer, laborer topside, outside motorperson, miner, conveyor operator, miner welder, heading motorperson, erecting operator, mucking machine operator, nozzle person, rodperson, safety miner, shaft & tunnel, steel & rodperson, mole nipper, concrete worker, form erector (wood, steel and all accessories), cement finisher (this type of work only),

Museum of Natural History and Planetarium at Roger Williams Park  
 Providence, Rhode Island

Renovations  
 Job No. 21041

top signal person, bottom person (when heading is 50' from shaft), burner, shield operator and TBM operator

GROUP 2: Change house attendant, powder watchperson

GROUP 3: Hazardous waste work within the "HOT" zone

PAIN0011-005 06/01/2023

	Rates	Fringes
PAINTER		
Brush and Roller.....	\$ 37.62	22.85
Epoxy, Tanks, Towers, Swing Stage & Structural Steel.....	\$ 39.62	22.85
Spray, Sand & Water Blasting.....	\$ 40.62	22.85
Taper.....	\$ 38.37	22.85
Wall Coverer.....	\$ 38.12	22.85

PAIN0011-006 06/01/2022

	Rates	Fringes
GLAZIER.....	\$ 40.78	23.40

FOOTNOTES:

SWING STAGE: \$1.00 per hour additional.

PAID HOLIDAYS: Labor Day & Christmas Day.

PAIN0011-011 06/01/2023

	Rates	Fringes
Painter (Bridge Work).....	\$ 56.25	23.45

PAIN0035-008 06/01/2011

	Rates	Fringes
Sign Painter.....	\$ 24.79	13.72

PLAS0040-001 06/05/2023

BUILDING CONSTRUCTION

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...\$ 42.77		29.63
FOOTNOTE: Cement Mason: Work on free swinging scaffolds under 3 planks width and which is 20 or more feet above ground and any offset structure: \$.30 per hour additional.		
-----		
PLAS0040-002 07/01/2023		
HEAVY AND HIGHWAY CONSTRUCTION		
	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...\$ 37.45		24.85
-----		
PLAS0040-003 06/05/2023		
	Rates	Fringes
PLASTERER.....\$ 42.77		29.63
-----		
* PLUM0051-002 08/28/2023		
	Rates	Fringes
Plumbers and Pipefitters.....\$ 50.59		32.75
-----		
ROOF0033-004 08/01/2023		
	Rates	Fringes
ROOFER.....\$ 50.03		33.69
-----		
SFRI0669-001 04/01/2023		
	Rates	Fringes
SPRINKLER FITTER.....\$ 47.55		32.27
-----		
SHEE0017-002 12/01/2020		
	Rates	Fringes
Sheet Metal Worker.....\$ 38.58		36.73
-----		
TEAM0251-001 05/01/2023		

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 29.71	34.602+A+B
GROUP 2.....	\$ 29.86	34.602+A+B
GROUP 3.....	\$ 29.91	34.602+A+B
GROUP 4.....	\$ 29.96	34.602+A+B
GROUP 5.....	\$ 30.06	34.602+A+B
GROUP 6.....	\$ 30.46	34.602+A+B
GROUP 7.....	\$ 30.66	34.602+A+B
GROUP 8.....	\$ 30.16	34.602+A+B
GROUP 9.....	\$ 30.41	34.602+A+B
GROUP 10.....	\$ 30.21	34.602+A+B

FOOTNOTES:

A. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, plus Presidents' Day, Columbus Day, Veteran's Day & V-J Day, providing the employee has worked at least one day in the calendar week in which the holiday falls.

B. Employee who has been on the payroll for 1 year or more but less than 5 years and has worked 150 Days during the last year of employment shall receive 1 week's paid vacation; 5 to 10 years - 2 weeks' paid vacation; 10 or more years - 3 week's paid vacation.

C. Employees on the seniority list shall be paid a one hundred dollar (\$100.00) bonus for every four hundred (400) hours worked, up to a maximum of five hundred dollars (\$500.00)

All drivers working on a defined hazard material job site shall be paid a premium of \$2.00 per hour over applicable rate.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Pick-up trucks, station wagons, & panel trucks

GROUP 2: Two-axle on low beds

GROUP 3: Two-axle dump truck

GROUP 4: Three-axle dump truck

GROUP 5: Four- and five-axle equipment

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

GROUP 6: Low-bed or boom trailer.

GROUP 7: Trailers when used on a double hook up (pulling 2 trailers)

GROUP 8: Special earth-moving equipment, under 35 tons

GROUP 9: Special earth-moving equipment, 35 tons or over

GROUP 10: Tractor trailer

-----  
 WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
 =====

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular

rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010



08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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 WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
 Wage and Hour Division  
 U.S. Department of Labor  
 200 Constitution Avenue, N.W.  
 Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
 U.S. Department of Labor  
 200 Constitution Avenue, N.W.  
 Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

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SECTION 01 10 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Contract description.
- B. Contractor's use of site and premises.
- C. Work sequence.
- D. Owner occupancy.
- E. Hazardous Material Suspicion
- F. Definitions

1.02 CONTRACT DESCRIPTION

- A. Work of the Project includes renovations to the Roger Williams Park Natural History Museum & Planetarium as described on the drawings and in this project manual.
- B. Perform the Work of the Contract under a stipulated sum Contract with the Owner in accordance with the Conditions of Contract.
- C. The Work of the Contract is identified in the Project Manual and on the Drawings.

1.03 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Limit use of the site and premises to allow:
  - 1. Owner occupancy throughout construction.
  - 2. Use of the site and premises by the public.
- B. Construction Personnel Conduct
  - 1. The following conduct by construction personnel will not be tolerated on the Owner's property, violators may be ejected from the site.
    - a. NO SMOKING is allowed. The Contractor will erect signs noting such at all entrances.
    - b. No drugs or alcohol are allowed
    - c. No firearms or weapons are allowed.
    - d. No foul language will be tolerated.
    - e. No fighting. All involved will be subject to being removed from the site.

- C. On-Site Work Hours:
1. Work shall be generally performed during normal business working hours of 7:00 A.M. to 3:30 P.M., Monday through Friday, except otherwise indicated.
  2. Weekend Hours: 8:30 A.M. to 4:30 P.M. Saturday or Sunday with written permission from the Owner 48 hours in advance of the date requested.
  3. All exceptionally noisy work is restricted to between 9 A.M. and 4:30 P.M.
  4. Holiday Hours: No work shall be permitted on major holidays.
  5. Hours for Utility Shutdowns: Utility shutdowns which may have an impact on the operation of the existing building shall not be allowed without prior written permission and approval from the Owner

#### 1.04 WORK SEQUENCE

- A. Construct the Work to accommodate the Owner's occupancy requirements during the construction period at which time the facility will be closed to the public. Additionally, the contractor shall coordinate the construction schedule and operations with the Owner.

#### 1.05 OWNER OCCUPANCY

- A. The Owner will occupy the site and premises during the entire period of construction.
- B. Cooperate with the Owner to minimize conflict, and to facilitate the Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

#### 1.06 HAZARDOUS MATERIAL SUSPICION

- A. If, during the course of construction, the Contractor suspects a material to contain asbestos, all work involving the material is to be stopped and the Architect notified immediately of the suspicion. Until the material is confirmed to be safe or tested and determined to be an asbestos containing material, the Contractor is to assume it contains asbestos and is to avoid contact. Upon notification of its composition the Architect will determine the course of action and inform the Contractor accordingly.

#### 1.07 DEFINITIONS

- A. Basic Contract definitions are included below.
1. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
  2. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
  3. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

4. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
5. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
6. "Install": Operations at Project site including unloading, temporarily storing, unpacking, disposing of packaging, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
7. "Provide": Furnish and install, complete, in place, and ready for the intended use.
8. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings.

#### **PART 2 - PRODUCTS**

Not Used.

#### **PART 3 - EXECUTION**

Not Used.

END OF SECTION

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SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Schedule of values.
- B. Applications for payment.
- C. Sales Tax Exemption
- D. Change procedures.
- E. Defect assessment.
- F. Unit prices.

1.02 SCHEDULE OF VALUES

- A. Submit a printed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet
- B. Submit Schedule of Values in duplicate, one copyrighted original and one copy, within fifteen (15) days after date of receipt of a Notice to Proceed.
- C. 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 and insurance.
- D. Include in each line item, the amount of Allowances specified in Section 01 21 00 if occurring. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- E. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
- F. Revise schedule to list approved Change Orders, with each Application for Payment.

1.03 APPLICATIONS FOR PAYMENT

- A. Submit each application on an original copyrighted AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet, accompanied by three copies.
  - 1. Individually sign and notarize, and emboss with notary's official seal, the original and each of the three copies.
  - 2. Applications not including original copyrighted AIA G702, and G703 Forms, will be rejected, and returned for resubmittal.
  - 3. Applications not properly signed and notarized will be rejected, and returned for resubmittal.



- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Provide one copy of the updated construction schedule with each Application for Payment submission.
  - 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, one copy of the Certified Monthly Payroll Record for the previous month's pay period.
- E. Payment Period: Submit at intervals stipulated in the Agreement.
- F. Submit with transmittal letter as specified for Submittals in Section 01 33 00.
- G. Beginning with the second Application for Payment, Contractor's right to payment must be substantiated by documenting, on a copy of the Waiver of Lien Form included in Document 00 65 19.16 - 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.
- H. Substantiating Data: When the Architect requires substantiating information, submit data justifying dollar amounts in question. Include the following with the Application for Payment :
  - 1. Record Documents as specified in Section 01 78 00, for review by the Owner which will be returned to the Contractor.
  - 2. Affidavits attesting to off-site stored products.
  - 3. Construction progress schedules, revised and current as specified in Section 01 33 00.

#### 1.04 SALES TAX EXEMPTION

- A. Owner is exempt from sales tax on products permanently incorporated in Work of the Project.

#### 1.05 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 Architect 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 Architect 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 fifteen (15) days.
- D. The Contractor may propose changes by submitting a request for change to the Architect, 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 60 00.

- 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 Architect.
- 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 that 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: Architect 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, within the time limits indicated in the Conditions of the Contract. The Architect will determine the change allowable in the Contract Sum and Contract Time as provided in the Contract Documents.
- I. Maintain detailed records of work done on a Time and Material basis. 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 Architect 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.
  2. 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.
  3. Promptly enter changes in the Project Record Documents.

#### 1.06 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Architect, it is not practical to remove and replace the Work, the Architect 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 Architect.
- D. The defective Work will be partially repaired to the instructions of the Architect, and the unit sum will be adjusted to a new sum at the discretion of the Architect.
- E. The individual Specification Sections may modify these options or may identify a specific formula or percentage sum reduction.
- F. The authority of the Architect 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.

#### 1.07 UNIT PRICES

- A. Authority: Measurement methods are delineated in the individual specification Sections.
- B. Measurement methods delineated in the individual specification Sections complement the criteria of this section. In case of conflict, the requirements of the individual specification Section govern.
- C. Take measurements and compute quantities. The Architect will verify measurements and quantities.
- D. Unit Quantities: The quantities and measurements indicated in the Bid Form are for contract purposes only. The quantities and measurements supplied or placed in the Work shall determine payment.
  - 1. When the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit sum contracted.
  - 2. When the actual Work requires a 25 percent or greater change in quantity than those quantities indicated, the Owner or Contractor may claim for a Contract Price adjustment.
- E. Unit Price amount includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.
- F. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Architect multiplied by the unit sum for Work which is incorporated in or made necessary by the Work.
- G. Measurement of Quantities:
  - 1. Weigh Scales: Inspected, tested and certified by the applicable state Weights and Measures department within the past year.
  - 2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.

3. Metering Devices: Inspected, tested and certified by the applicable State department within the past year.
4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
5. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
6. Measurement by Area: Measured by square dimension using mean length and width or radius.
7. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
8. Stipulated Sum Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

### PART 2 - PRODUCTS

Not Used.

### PART 3 - EXECUTION

Not Used.

END OF SECTION

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SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Cash allowances.

1.02 CASH ALLOWANCES

- A. **Costs Included in Cash Allowances:** Cost of product to Contractor or Subcontractor, labor for installation and finishing, less applicable trade discounts; delivery to site, and applicable taxes
- B. **Costs Not Included in Cash Allowances but included in the Contract Sum:** Product delivery to site and handling at the site, including unloading, uncrating, and storage; protection of products from elements and from damage, Overhead & Profit, all bonds and permit fees.
- C. **Architect Responsibilities:**
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.
- D. **Contractor Responsibilities:**
1. Assist Architect in selection of products, suppliers and installers.
  2. Obtain proposals from suppliers and installers and offer recommendations.
  3. On notification of selection by Architect, 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.
- E. Differences in costs will be adjusted by Change Order.
- F. **Allowances Schedule:**
1. **Allowance No. 1: New Kiosk:**  
 Include the stipulated sum of **Thirty five thousand dollars (\$ 35,000.00)** in the Base Bid for the purchase, delivery and installation of a new freestanding kiosk for the interior of the museum.
  2. **Allowance No. 2 – New Video Intercom System:**  
 Include the stipulated sum of **five thousand dollars (\$ 5,000.00)** in the Base Bid for the purchase, delivery and installation of a new video intercom system including demolition of the existing system, installation of the new video system, new master station in an office and all new cabling.

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

**PART 2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not Used.

END OF SECTION

SECTION 01 22 00

ALTERNATES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Alternates.

1.02 ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work as required.
- C. Schedule of Alternates:
1. Alternate No. 1: Planetarium:  
This Alternate contemplates the addition to the Base Bid all work associated with construction in the Planetarium as identified and shown on the drawings.
  2. Alternate No. 2: Small Exhibit Hall 210:  
This Alternate contemplates the addition to the Base Bid all work associated with construction in the Small Exhibit Hall Room 210 and Vestubule 015 as identified and shown on the drawings.
  3. Alternate No. 3: Stained Glass Window Wall  
This Alternate contemplates the addition to the Base Bid all work associated with construction at the stained glass window wall as identified and shown on the drawings.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION



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SECTION 01 31 00

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Coordination and project conditions.
- B. Preconstruction meeting.
- C. Site mobilization meeting.
- D. Progress meetings.
- E. Preinstallation meetings.

1.02 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 with provisions for accommodating the items installed later.
- 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, plumbing 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.
  - 1. The Contractor is to provide coordination drawings indicating size and locations of all mechanical, plumbing, fire protection and electrical work to confirm conflicts do not exist between systems. Submit four hard copies to the Architect for review prior to purchasing and fabrication of materials.
- D. In finished areas except as otherwise indicated, conceal the pipes, ducts, and wiring within the construction. Coordinate the locations of fixtures and outlets with the finish elements.
- E. Coordinate the completion and clean up of the Work of the separate Sections in preparation for Substantial Completion.
- F. After the Owner's occupancy of the premises, coordinate access to the site for correction of the defective Work and the Work not in accordance with the Contract Documents, to minimize disruption of the Owner's activities.

1.03 PRECONSTRUCTION MEETING

- A. The Architect will schedule a meeting after a Notice to Proceed is issued to the Contractor.
- B. Attendance Required: Owner, Architect, and Contractor.
- C. Agenda:
  - 1. Execution of the Owner-Contractor Agreement.
  - 2. Submission of the executed bonds and insurance certificates.
  - 3. Distribution of the Contract Documents.
  - 4. Submission of a list of Subcontractors, a list of products, schedule of values, and a progress schedule.
  - 5. Designation of the personnel representing the parties in the Contract, and the Architect.
  - 6. The procedures and processing of the field decisions, submittals, substitutions, applications for payments, proposal requests, Change Orders, and Contract closeout procedures.
  - 7. Scheduling.
- D. Record the minutes and distribute copies within two days after the meeting to the participants, with two copies to the Architect, the Owner, the participants, and those affected by the decisions made.

1.04 SITE MOBILIZATION MEETING

- A. The Architect will schedule a meeting at the Project site prior to the Contractor's occupancy.
- B. Attendance Required: The Owner, Architect, Special Consultants, and, 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 occupancy.
  - 3. Construction facilities and controls provided by the Owner.
  - 4. Temporary utilities provided by the Owner.
  - 5. Survey and building layout.
  - 6. Security and housekeeping procedures.
  - 7. Schedules.
  - 8. Application for payment procedures.
  - 9. Procedures for testing.
  - 10. Procedures for maintaining the record documents.
  - 11. Requirements for start-up of the equipment.
  - 12. Inspection and acceptance of the equipment put into service during the construction period.
- D. Record the minutes and distribute the copies within two days after the meeting to the participants, with two copies to the Architect, Owner, participants, and those affected by the decisions made.

### 1.05 PROGRESS MEETINGS

- A. Schedule and administer the meetings throughout the progress of the Work at maximum bi-weekly (14 day) intervals.
- 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, Architect, 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 the off-site fabrication and 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. Record the minutes and distribute the copies within two days after the meeting to the participants, with two copies to the Architect, Owner, participants, and those affected by the decisions made.

### 1.06 PREINSTALLATION MEETING

- A. When required in the individual specification Sections, convene a preinstallation 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 Architect 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 two copies to the Architect, Owner, participants, and those affected by the decisions made.

Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island

Renovations  
Job No. 21041

**PART 2 - PRODUCTS**

Not used.

**PART 3 - EXECUTION**

Not used.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Proposed products list.
- D. Method for Submission of Shop Drawings and Product Data
- E. Product data.
- F. Shop drawings.
- G. Samples.
- H. Design data.
- I. Test reports.
- J. Certificates.
- K. Manufacturer's instructions.
- L. Manufacturer's field reports.

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.
  - 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 Architect.
- B. Transmit each submittal with a transmittal form.
- C. Sequentially number the transmittal form. Mark revised submittals with the original number and a sequential alphabetic suffix.
- D. Identify the Project, Contractor, subcontractor and supplier; the pertinent drawing and detail number, and the specification Section number, appropriate to the submittal.

- E. Apply a Contractor's stamp, signed or initialed, 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.
- F. Schedule submittals to expedite the Project, and deliver to the Architect at their business address. Coordinate the submission of related items. Upon completion of the submittal's review, the Architect's office will notify the Contractor. The Contractor is then responsible to pick-up the submittals in a timely manner.
- G. For each submittal for review, allow fifteen (15) calendar days excluding the delivery time to and from the Contractor.
- H. Identify the variations from the Contract Documents and the Product or system limitations that may be detrimental to a successful performance of the completed Work.
- I. Allow space on the submittals for the Contractor's and the Architect's review stamps.
- J. When revised for resubmission, identify the changes made since the previous submission.
- K. Distribute copies of the reviewed submittals as appropriate. Instruct the parties to promptly report an inability to comply with the Contract requirements.
- L. Submittals not requested will not be recognized or processed. The Contractor will be notified of the submittal's refusal.
- M. The Contractor will compensate the Architect and all consulting Engineers for services performed reviewing submittals beyond the original review and two follow-up reviews of the same product, material, sample or assembly. The compensation will be made through a credit change order that will reduce the total contract amount.

### 1.03 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit preliminary outline Schedules within fifteen (15) days after the date of receipt of a Notice to Proceed for coordination with the Owner's requirements. After a review, submit detailed schedules within fifteen (15) days modified to accommodate the revisions recommended by the Architect.
- B. Submit revised Progress Schedules with each Application for Payment.
- C. Distribute copies of the reviewed schedules to the Project site file, subcontractors, suppliers, and other concerned parties.
- D. Instruct the recipients to promptly report, in writing, the problems anticipated by the projections indicated in the schedules.
- E. Submit a computer generated horizontal bar chart with a separate line for each major portion of the Work or operation, or section of the Work, identifying the first workday of each week.
- F. 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 the duration.

- G. Indicate an estimated percentage of completion for each item of the Work at each submission.
- H. 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 Architect. Indicate the decision dates for selection of the finishes.
- I. Indicate the delivery dates for Owner furnished Products, and for Products identified under Allowances.
- J. Revisions to Schedules:
  - 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.

#### 1.04 PROPOSED PRODUCTS LIST

- A. Within fifteen (15) days after the date of receipt of a Notice to Proceed, 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 METHOD FOR SUBMISSION OF SHOP DRAWING AND PRODUCT DATA

- A. Method of electronic or hard copy delivery of shop drawing and data submittals is to be discussed with Architect at Preconstruction meeting.  
 Use one of the three methods listed below:
  - 1. Use an internet-based system agreed upon by the Architect and Contractor.  
 Comply with required transmittal and data formats using numbering system approved by Architect.  
 Assemble submittal package into a single indexed file incorporating submittal and cover sheet explaining project name, number, Architect, Contractor and submittal number.
  - 2. Email an electronic format (PDF) copy to the Architect.  
 Comply with required transmittal and data formats using numbering system approved by Architect.  
 Assemble submittal package into a single indexed file incorporating submittal and cover sheet explaining project name, number, Architect, Contractor and submittal number.
  - 3. Hard copies delivered to the Architect are to be submitted with the number of copies that the Contractor requires, plus three copies the Architect will retain.



- B. All shop drawings 24" x 36" or larger are to be delivered to the Architect in hard copy format as noted in Method 3 above.
- C. All submittals are to include a Contractor's review stamp confirming approval prior to submission to the Architect.
- D. The Architect will return the reviewed submittal to the Contractor for distribution to subcontractors, suppliers, fabricators, and others as necessary for proper performance of the Work.
- E. Submit color samples on actual product material for final color selection by sending them via postal or delivery service directly to the Architect's office.

#### 1.06 PRODUCT DATA

- A. Product Data: Submit to the Architect 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 78 00.
- B. 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.
- C. Indicate the product utility and electrical characteristics, the utility connection requirements, and the location of utility outlets for service for functional equipment and appliances.
- D. After receiving approved submittals, distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01 78 00.

#### 1.07 SHOP DRAWINGS

- A. Shop Drawings: Submit to the Architect 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 78 00.
- B. Indicate the special utility and electrical characteristics, the utility connection requirements, and the location of utility outlets for service for functional equipment and appliances.
- C. Submit according to method agreed upon in Paragraph 1.05 or if submitting hard copies, submit the number of copies that the Contractor requires, plus three copies the Architect will retain.

#### 1.08 SAMPLES

- A. Samples: Submit to the Architect 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 78 00.
- B. Samples For Selection as Specified in Product Sections:
  - I. Submit to the Architect for aesthetic, color, or finish selection.

2. Submit samples of the finishes, indicating colors, texture, and patterns for the Architect's selection.
  3. After review, produce duplicates and distribute in accordance with the SUBMITTAL PROCEDURES article and for the record documents purposes described in Section 01 78 00.
- 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.
  - D. Include identification on each sample, with the full Project information.
  - E. Submit the number of samples specified in the individual specification Sections; the Architect will retain one sample.
  - F. Reviewed samples, which may be used in the Work, are indicated in the individual specification Sections.
  - G. Samples will not be used for testing purposes unless they are specifically stated to be in the specification Section.

#### 1.09 DESIGN DATA

- A. Submit for the Architect's knowledge as contract administrator.
- B. Submit for information for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

#### 1.10 TEST REPORTS

- A. Submit for the Architect's knowledge as contract administrator.
- 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.

#### 1.11 CERTIFICATES

- A. When specified in the individual specification Sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to the Architect, 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.
- C. Certificates may be recent or previous test results on the material or product, but must be acceptable to the Architect.

1.12 MANUFACTURER'S INSTRUCTIONS

- A. When specified in the individual specification Sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to the Architect 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.

1.13 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for the Architect's benefit as contract administrator.
- B. Submit the report in duplicate within thirty (30) days of observation to the Architect for information.
- C. Submit for information for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

**PART 2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not Used.

END OF SECTION

SECTION 01 43 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Quality control and control of installation.
- B. Verification of Credentials and Licenses.
- C. Safety Awareness Policy
- D. Tolerances
- E. References.
- F. Mock-up requirements.
- G. Manufacturers' field services.

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 the manufacturers' instructions, including each step in sequence.
- C. When the manufacturers' instructions conflict with the Contract Documents, request a clarification from the Architect 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.

- H. Field measurements
  - I. Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication scheduled with construction progress to avoid construction delays.
  - I. The Contractor, by approving and submitting Shop Drawings, Product Data, Samples, and similar submittals thereby represent that they have determined and verified all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

#### 1.03 VERIFICATION OF CREDENTIALS AND LICENSES

- A. All persons employed on the project site must have appropriate and current credentials and licenses in their possession, at the project site, for the work they are performing.
- B. Be forewarned that inspectors will be checking for verification of credentials and licenses of both union and non-union persons, in their onsite inspections.
- C. Inspectors will also be reviewing Contractor's Certified Monthly Payroll Records for conformance with RI State Prevailing Wage Rate requirements.
- D. Those persons without the appropriate credentials and licenses will be subject to dismissal from the project site.

#### 1.04 SAFETY AWARENESS POLICY

- A. In accordance with Rhode Island General Laws, Title 28, S28-20-35 5.1 Safety awareness program required. (Effective January 1, 2002.) all contractors who bid on municipal and state construction projects with a total project cost of One Hundred Thousand Dollars (\$100,000.00) or more, shall have an OSHA "ten hour safety construction program" for their on-site employees. The training shall utilize instructors trained by the Occupational Safety Health Administration, using OSHA approved curriculum. Graduates shall receive a card from the U. S. Department of Labor Occupational Safety and Health Administration certifying the successful completion of the training course. The director of the Rhode Island Department of Labor and Training shall promulgate rules, regulations and penalties to enforce provisions of this section.
- B. The Contractor is required to conform to all applicable OSHA requirements on this project.

#### 1.05 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 Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

#### 1.06 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 Architect before proceeding.
- E. Neither the contractual relationships, duties, nor responsibilities of the parties in the Contract, nor those of the Architect, shall be altered from the Contract Documents by mention or inference otherwise in reference documents.

#### 1.07 MOCK-UP REQUIREMENTS

- A. Tests will be performed under the provisions identified in this Section and identified in the respective product specification Sections.
- B. Assemble and erect the specified items with the specified attachment and anchorage devices, flashing, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where the mock-up has been accepted by the Architect and is specified in the product specification Sections to be removed, remove the mock-up and clear the area when directed to do so by the Architect.

#### 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 Architect thirty (30) days in advance of the required observations. The Observer is subject to approval by the Architect.
- 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 33 00 - Submittal Procedures, Manufacturer's Field Reports article.

**PART 2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not used.

END OF SECTION

SECTION 01 50 00

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 ventilation.
  - 5. Temporary water service.
  - 6. Temporary sanitary facilities.
- B. Construction Facilities:
  - 1. Storage sheds and trailers.
  - 2. Field office
  - 3. Temporary scaffolding
  - 4. Hoisting
  - 5. Vehicular access.
  - 6. Parking.
  - 7. Progress cleaning and waste removal.
- C. Temporary Controls:
  - 1. Barriers
  - 2. Protection of Property
  - 3. Enclosures
  - 4. Dust control.
  - 5. Noise control.
  - 6. Pollution control.
  - 7. Fire Detection
  - 8. Pest control.
  - 9. Rodent control.

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. Permanent convenience receptacles may be utilized during construction.

1.03 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain lighting for construction operations to achieve a minimum lighting level of 2 watt/sq ft.
- B. Permanent building lighting may be utilized during construction.



1.04 TEMPORARY HEATING

- A. Existing heating equipment may be used.
- B. The Owner will pay the cost of heat. Exercise measures to conserve energy. Utilize the Owner's existing heat plant, extend and supplement with temporary heat devices as needed to maintain the specified conditions for construction operations.
- 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.

1.05 TEMPORARY VENTILATION

- A. Ventilate the enclosed area to achieve a curing of materials, to dissipate humidity, and to prevent the accumulation of dust, fumes, vapors, or gases.
- B. Utilize the existing ventilation equipment. Extend and supplement the equipment with temporary fan units as required to maintain clean air for construction operations.

1.06 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.

1.07 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain the required facilities and enclosures. Existing facility use is not permitted. Provide facilities at the time of project mobilization.

1.08 STORAGE SHEDS AND TRAILERS

- A. Storage Areas, Sheds and Trailers: 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 60 00.
- B. Maintenance and Cleaning
  - 1. Maintain the approach walks free of mud, water, and snow.
- C. Removal: At the completion of the Work remove the trailers, temporary buildings, utility services, and debris. Restore the areas to original condition.

1.09 FIELD OFFICE

- A. The existing building may not be used for an office during construction. It is the Contractor's option to provide a trailer and place it in a location approved by the Architect and Owner.

1.10 TELEPHONE SERVICE

- A. The Contractor is required to ensure the on-site Project Supervisor maintains a cell phone in their possession for the duration of the Contract.

1.11 TEMPORARY SCAFFOLDING

- A. Contractor is to provide temporary scaffolding as necessary for construction purposes.
- B. The scaffolding is to be braced properly, assembled and installed as required to meet all OSHA requirements.
- C. Remove from the site all scaffolding, associated bracing and supports upon completion of construction. Repair all surfaces and site to original condition.

1.12 HOISTING

- A. Contractor is responsible for all hoisting required to facilitate, serve, stock, clean, and complete the Work. Include all costs for operating engines, fuel, delivery and removal, mobilization, staging, protection of grades and surfaces, and equipment. All surfaces damaged by hoisting equipment or crane are to be cleaned and repaired to match original condition. All damaged grass is to receive loam and seed to match existing.  
The Contractor is responsible to adhere to all OSHA requirements.

1.13 VEHICULAR ACCESS

- A. Provide unimpeded access for emergency vehicles. Maintain 20 foot width driveways with turning space between and around combustible materials.
- B. Provide and maintain access to fire hydrants and control valves free of obstructions.
- C. Use designated existing on-site roads for construction traffic.

1.14 PARKING

- A. Arrange for temporary surface parking areas to accommodate the construction personnel.
- B. Location must be approved by the Owner.
- C. Use of existing parking facilities by construction personnel is permitted.
- D. When site space is not adequate, arrange through the Owner for additional off-site parking.
- E. Use of designated existing on-site streets and driveways for construction traffic is permitted. Tracked vehicles are not allowed on paved areas.
- F. Do not allow heavy vehicles or construction equipment in parking areas.

1.15 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. Collect and remove waste materials, debris, and rubbish from the site periodically, weekly, or daily, as necessary to prevent an on-site accumulation of waste material, debris, and rubbish, and dispose off-site.
- C. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.16 BARRIERS

- A. Provide barriers to prevent unauthorized entry to the construction areas and to protect existing facilities 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 and egress from the existing 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 PROTECTION OF PROPERTY

- A. **NOTE:** The Contractor is required to follow all protocols stipulated in NFPA 909 (2017) – Code for Protection of Cultural Resource Properties. This code describes principles and practices of protection for cultural resource properties (museums, libraries, and places of worship) and their contents and collections from conditions or physical situations with the potential to cause damage or loss. The Code outlines a comprehensive protection program addressing all areas including fire prevention; fire protection management; security; emergency preparedness; and inspection, testing, and maintenance of protection systems.

1.18 ENCLOSURES

- A. Provide temporary fire resistant polyethylene dust drapes as required to separate the work areas from the Owner occupied areas, to prevent penetration of dust and moisture into the Owner occupied areas, and to prevent damage to the existing materials and equipment. Seal perimeter as required.

1.19 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.

1.20 NOISE CONTROL

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

- B. Restrictions on Noise:
1. Use equipment with well-maintained mufflers.
  2. Use the least noisy techniques practical.
  3. Schedule noisy activities when ambient background noise level is highest.
  4. Turn off all unneeded and idling equipment and engines.
  5. Locate noise sources as far as practical from noise sensitive locations.
  6. Orient noise sources away from noise sensitive locations

1.21 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.

1.22 FIRE DETECTION

- A. Before beginning any construction that can potentially trigger the existing fire detection system, notify the Owner and request to temporarily disconnect the system in the specific areas of construction, for as long as may be necessary.

1.23 PEST CONTROL

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

1.24 RODENT CONTROL

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

**PART-2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not Used.

END OF SECTION

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SECTION 01 60 00

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 with a Provision for Substitutions:  
Submit a request for substitution for any manufacturer not named in accordance with the following article.
- C. Products Specified by Naming Three or More Manufacturers with No Substitutions:  
Products of one of the manufacturers listed and meeting the specifications, no options or substitutions allowed.

#### 1.06 PRODUCT SUBSTITUTION PROCEDURES

- A. Throughout these Specifications, types of materials may be specified by manufacturer's name, and product information in order to establish standards of quality and performance and not for the purpose of limiting competition.
- B. Inclusion of additional names of manufacturers, other than the Basis of Design manufacturer, does not imply acceptability of standard products from those manufacturers listed. All manufacturers listed shall conform, with modification as necessary, to criteria established by the specification for performance, efficiency, materials, finishes and special accessories along with, at a minimum, matching the Basis of Design product.
- C. No substitutions will be considered prior to receipt of Bids unless written request for approval (by hard copy or email) has been received by the Architect at least 10 calendar days prior to the Bid due date. If the product substitution is approved prior to receipt of the Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals announced in any other manner.

It will be the Architect's and Owner's option to consider a formal request, review and acceptance of a product substitution following award of the contract. For all requests made after award of the contract, the Architect will review the requests with reasonable promptness and notify the Contractor in writing of the decision to accept or reject the substitution.

- D. A request for substitution of any manufacturer or product not named in a specification section is to be submitted in accordance with the following.
1. Document each request with complete data substantiating the compliance of a proposed Substitution with the Contract Documents.
  2. A request constitutes a representation that the Contractor:
    - a. Has investigated the proposed product and determined that it is equal to or superior in all respects to the specified product.
    - b. Will provide the same warranty for the substitution as for the specified product.
    - c. Will coordinate the installation and make changes to other Work that may be required for the Work to be complete with no additional cost to the Owner.
    - d. Waives claims for additional costs or time extension that may subsequently become apparent.
    - e. Will coordinate installation with all affected trade Contractors, specialty Contractors and the like and will be responsible for any and all costs which may arise as a result of this substitution.
    - f. Will reimburse the Owner and the Architect for review or redesign services associated with re-approval by the authorities having jurisdiction.
- E. Substitutions will not be reviewed when a substitution is 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. If the Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the Contractor shall inform the Architect in writing of the nature of such deviations at the time the material is submitted for review.
- G. Substitution Submittal Procedure:
1. Submit the Request for Substitution letter, Shop Drawings, Product Data, direct comparison table and the certified test results attesting to the proposed product equivalence by E-mail via an electronic format (PDF) copy to the Architect. Assemble package into a single indexed file incorporating all the required information.
  2. The Contractor shall submit a separate request for each product substitution.
  3. Provide direct comparison between the specified product and the proposed substitution. The burden of proof is on the proposer. Supporting data to be submitted to permit a fair evaluation of the proposed substitution must address:
    - a. Performance;
    - b. Capacity;
    - c. Efficiency;
    - d. Safety;
    - e. Function;
    - f. Appearance;
    - g. Quality and durability;



- h. Finish;
  - i. Warranty terms and conditions;
  - j. Directly compare, side-by side, in table format, all listed testing agency performance requirements;
  - k. Delivery times and effect on schedules, if any;
  - l. Changes in space requirements or affect on other elements of work, if any;
  - m. Availability of maintenance service and source of replacement materials, if applicable.
- H. The Contract Documents are intended to produce a building of consistent character and quality of design. All components of the building including visible items of mechanical and electrical equipment have been selected to have a coordinated design in relation to the overall appearance of the building. The Architect shall judge the design and appearance of proposed substitutes on the basis of their suitability in relation to the overall design of the Project, as well as for their intrinsic merits. The Architect will not approve as equal to materials specified proposed substitutes which, in the Architect's opinion, would be out of character, obtrusive, or otherwise inconsistent with the character or quality of design of the Project. In order to permit coordinated design of color and finishes the Contractor shall, if required by the Architect, furnish the substituted material in any color, finish, texture, or pattern which would have been available from the manufacturer originally specified, at no additional cost to the Owner.

**PART 2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not Used.

END OF SECTION

SECTION 01 70 00

EXECUTION REQUIREMENTS

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Examination.
- B. Preparation.
- C. Protection of adjacent construction.
- D. Cutting and patching.
- E. Special procedures.
- F. Progress cleaning and waste removal.
- G. Final cleaning.
- H. Starting and adjusting of systems.
- I. Demonstration and Instructions.
- J. Protecting Installed Construction.

1.02 EXAMINATION

- A. Acceptance of Conditions:
  - 1. Verify that the existing applicable site conditions, substrates, or substrate surfaces are acceptable or meet the specific requirements of the individual specifications Sections, for subsequent Work to proceed.
  - 2. Verify that the existing substrate is capable of structural support or attachment of new Work being applied or attached.
  - 3. Examine and verify specific conditions described in the individual specifications Sections.
  - 4. Verify that utility services are available, of the correct characteristics, and in the correct locations.
  - 5. Beginning of new Work, that relies upon the quality and proper execution of the 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 the next material or substance.
- B. Seal cracks or openings of the substrate prior to applying the next material or substance.
- C. Apply a manufacturer required or recommended substrate primer, sealer, or conditioner 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 the product manufacturers.

### 1.04 PROTECTION OF ADJACENT CONSTRUCTION

- A. Protect the existing adjacent properties and provide special protection where specified in the individual Specification Sections.
- B. Provide protective coverings at wall, projections, jambs, sills, and soffits of the existing openings.
- C. Protect the 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. Repair adjacent properties damaged by the construction operations to the original condition to the satisfaction of the Owner.
- E. Prohibit unnecessary traffic from the existing landscaped areas.
- F. Restore the grassed landscaped areas damaged by the construction operations to a full healthy growth by installing loam and sod.

### 1.05 CUTTING AND PATCHING

- A. Employ the original, or skilled and experienced installer to perform cutting and patching.
- B. Submit a written request in advance of the 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 the element.
  - 4. Visual qualities of sight-exposed elements.
  - 5. Existing construction, or the Work of separate contractor.
- C. Execute cutting, fitting, and patching including excavation and fill, to complete the Work, and to:
  - 1. Fit the several parts together, to integrate with the 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 the 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 a masonry saw or core drill.
- F. Restore the Work with new Products in accordance with the requirements of Contract Documents.
- G. Fit Work tight to the pipes, sleeves, ducts, conduits, and other penetrations through surfaces.
- H. Maintain the integrity of the wall, ceiling, or floor construction; completely seal voids.
- I. At the penetration of fire rated partition, ceiling, or floor construction completely seal the voids with a fire rated or fire resistant material to the full thickness of the penetrated element as required to equal the rating of the surrounding construction.
- J. Refinish surfaces to match the adjacent finishes. For continuous surfaces refinish to nearest intersection; for an assembly refinish the entire unit.
- K. Identify any hazardous substance or conditions exposed during the Work to the Architect for a decision or remedy.

#### 1.06 SPECIAL PROCEDURES

- A. Materials: As specified in the product Sections; match the existing with new products, or salvaged products as appropriate, for patching and extending work.
- B. Employ a skilled and experienced installer to perform alteration work.
- C. Cut, move, or remove items as necessary for access to the 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 the materials as specified for finished Work.
- E. Remove the debris and abandoned items from the area and from concealed spaces.
- F. Prepare the surface and remove surface finishes to provide the installation of new Work and finishes.
- G. Close the openings in exterior surfaces to protect the existing Work from the weather and extremes of temperature and humidity.
- H. Remove, cut, and patch the Work in a manner to minimize damage and to provide a means of restoring products and finishes to the original or specified condition.
- I. Refinish the existing visible surfaces to remain in renovated rooms and spaces to the specified condition for each material, with a neat transition to the adjacent finishes.
- J. Where new Work abuts or aligns with the existing, provide a smooth and even transition. Patch the Work to match the existing adjacent Work in texture and appearance.

- K. When finished surfaces are cut so that a smooth transition with the new Work is not possible, terminate the existing surface along a straight line at a natural line of division and submit a recommendation to the Architect for review.
- L. Where a change of plane of 1/4 inch or more occurs, submit a recommendation for providing a smooth transition to the Architect for review.
- M. Patch or replace the portions of existing surfaces which are damaged, or showing other imperfections.
- N. Finish surfaces as specified in the individual product Sections or as indicated on the Drawings.

#### 1.07 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 the debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Sweep and vacuum clean the interior areas prior to the start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove the waste materials, debris, and rubbish from the site periodically or weekly and dispose of off-site.
- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

#### 1.08 FINAL CLEANING

- A. Execute final cleaning of areas affected by the Work prior to the final project assessment.
- B. Clean the interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean the equipment and fixtures to a sanitary condition using cleaning materials appropriate to the surface and material being cleaned.
- D. Clean or replace filters of operating equipment as directed by the Architect.
- E. Clean the debris from roofs, gutters, downspouts, and drainage systems.
- F. Clean the site; sweep the paved areas, rake clean the landscaped surfaces.
- G. Remove the waste and surplus materials, rubbish, and the construction facilities from the site.

#### 1.09 STARTING AND ADJUSTING OF SYSTEMS

- A. Coordinate the schedule for the starting and adjusting of various equipment and systems.

- B. Notify the Architect and the Owner seven days prior to the starting and adjusting of each item.
- C. Verify that each piece of equipment or system has been checked for the proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.
- D. Verify that the tests, meter readings and the 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 the starting and adjusting under the supervision of the responsible Contractor's personnel or manufacturer's representative, in accordance with the manufacturer's instructions.
- G. Adjust the operating Products and equipment to ensure smooth and unhindered operation.
- H. When specified in the individual specifications Section, require the manufacturer to provide the authorized representative to be present at the site to inspect, check, and approve the equipment or system installation prior to starting, and to supervise the placing of equipment or system in operation.
- I. Submit a written report in accordance with Section 01 43 00 that the equipment or system has been properly installed and is functioning correctly.

#### 1.10 DEMONSTRATION AND INSTRUCTIONS

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

#### 1.11 PROTECTING INSTALLED CONSTRUCTION

- A. Protect the installed Work and provide special protection where specified in the individual specification sections.
- B. Provide temporary and removable protection for the installed products. Control activity in the 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 the installed Work damaged by construction operations, as directed by the Architect.

**PART 2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not Used.

END OF SECTION

SECTION 01 74 19

WASTE MATERIALS MANAGEMENT AND RECYCLING

PART 1 GENERAL

1.01 RELATED DOCUMENTS:

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

1.02 WASTE MANAGEMENT GOALS FOR THE PROJECT

- A. The Owner has established that this Project shall generate the least amount of waste possible and that processes shall be employed that ensure the generation of as little waste as feasible including prevention of damage due to mishandling, improper storage, contamination, inadequate protection or other factors as well as minimizing overall packaging and poor quantity estimating.
- B. Of the inevitable waste that is generated, the waste materials designated in this specification shall be salvaged for reuse or recycling. Waste disposal in landfills or incinerators shall be minimized. On new construction projects this means careful recycling of job site waste, on demolition projects this also means careful removal for salvage.

1.03 SUMMARY:

- A. This Section includes required salvage and recycling of the following waste materials and applies to all such listed waste materials produced during the course of this Contract:
1. Concrete, Masonry, and Other Inert Fill Material: Concrete, brick, rock, clean soil not intended for other on-site use, broken up asphalt pavement containing no ABC stone, clay, concrete, or other contaminants, and other inert material.
  2. Metals: Metal scrap including iron, steel, copper, brass, and aluminum.
  3. Untreated Wood: Unpainted, untreated dimensional lumber, plywood, oriented strand board, masonite, particleboard, and wood shipping pallets.
  4. Gypsum Wallboard Scrap: Excess drywall construction materials including cuttings, other scrap, and excess materials.
  5. Cardboard: Clean, corrugated cardboard such as used for packaging, etc.
  6. Paper: Discarded office refuse such as unwanted files, correspondence, etc.
  7. Plastic Buckets: Containers for various liquid and semi-solid or viscous construction materials and compounds.
  8. Beverage Containers: Aluminum, glass, and plastic containers.
  9. Other Mixed Construction and Demolition Waste: Solid waste resulting solely from construction, remodeling, repair, or demolition operations on pavement, buildings, or other structures exclusive of waste materials listed herewith.
  10. Materials to be salvaged if possible:
    - a. Dimensioned Lumber and Heavy Timbers.
    - b. Structural Steel.
    - c. Insulation.
    - d. Brick and block.
    - e. Electric Equipment and Light Fixtures.
    - f. Plumbing fixtures and brass.



- B. Non-Recyclable Waste: Collect and segregate non-recyclable waste for delivery to a permitted landfill site.
  - I. Mixed Solid Waste: Solid waste usually collected as a municipal service, exclusive of waste materials listed above.

#### 1.04 HAZARDOUS MATERIAL SUSPICION

- A. If, during the course of construction, the Contractor suspects a material to contain asbestos, all work involving the material is to be stopped and the Architect notified immediately of the suspicion. Until the material is confirmed to be safe or tested and determined to be an asbestos containing material, the Contractor is to assume it contains asbestos and is to avoid contact. Upon notification of its composition the Architect will determine the course of action and inform the Contractor accordingly.

#### 1.05 DEFINITIONS:

- A. Waste Materials are defined as large and small pieces of the materials indicated which are excess to the contract requirements and generally include materials which are to be salvaged from existing construction and items of trimmings, cuttings and damaged goods resulting from new installations, which can not be effectively used in the Work.

#### 1.06 SUBMITTALS:

- A. Show compliance with regulations specified under "Quality Assurance" article below. Include a list of recycling facilities to which indicated recyclable materials will be distributed for disposal. Identify materials that are not recyclable or otherwise conservable that must be disposed of in a landfill or other means acceptable under governing State and local regulations. List permitted landfills and/or other disposal means to be employed. Indicate any instances where compliance with requirements of this specification does not appear to be possible and request resolution from the Architect.
- B. Delivery Receipts: Provide delivery receipts for waste materials salvaged and sent to permitted waste materials processors or recyclers within 48 hours of delivery that indicate the location and name of firm accepting recyclable waste materials, types of materials, net weights of each type, date of delivery and value of materials. Hazardous weights are not to be included.
- C. Application for Payments: The Contractor shall submit with each Application for Payment a summary of waste materials, recycled, salvaged and disposed of using a form generated by the Contractor and approved by the Architect. Failure to submit this information shall render the Application for Payment incomplete and shall delay Payment. The Summary shall contain the following information: For each material salvaged and recycled from the Project, include the amount (in cubic yards or tons or in the case of salvaged items state quantities by number, type and size of items) and the destination (i.e. recycling facility, used building materials yard). For each material land filled or incinerated from the Project, include the amount (in cubic yards or tons) of material and the identity of the landfill, incinerator or transfer station.

1.07 QUALITY ASSURANCE:

- A. Regulatory Requirements: Comply with all applicable requirements of the federal, state or local authorities concerning Management of Construction, Demolition, Land Clearing, Inert, and Yard Trash Debris
- B. Disposal Sites, Recyclers, and Waste Materials Processors: Use only facilities properly permitted by the State and by local authorities where applicable.
- C. Implementation: Include a discussion of waste management and recycling in worker orientation. Provide on-site instruction on appropriate separation, handling, recycling, and salvaging methods to be used by all parties at the appropriate stages of the work at the site. Include waste management and recycling discussion in pre-fabrication meetings with subcontractors and fabricators. Also include discussion of waste management and recycling in regular job meetings and job safety meetings conducted during the course of work at the site.

1.08 STORAGE AND HANDLING:

- A. Site Storage: Remove all indicated recyclable materials from the work location to approved containers daily. Failure to remove waste materials will be considered cause for withholding payment and termination of Contract.
- B. Position covered containers for recyclable waste materials at a designated location on the Project Site. Select a location for the recyclable materials containers separated from that of general waste and rubbish containers. Provide separate collection containers for a minimum of the following materials:
  - 1. Untreated lumber.
  - 2. Gypsum wallboard.
  - 3. Paper, paper products, and cardboard.
  - 4. Plastics.
  - 5. Metals.
  - 6. Glass.
  - 7. Other salvageable materials.
- C. Change out loaded containers for empty ones as demand requires, but not less than weekly.
- D. Handling: Deposit all indicated recyclable materials in the containers in a clean (no mud, adhesives, solvents, petroleum contamination), debris-free condition. Do not deposit contaminated materials into the containers until such time as such materials have been cleaned.
- E. If the contamination chemically combines with the material so that it can not be cleaned, do not deposit into the recycle containers. Comply disposal with all legal and regulatory requirements.

1.09 PROJECT/SITE CONDITIONS:

- A. Environmental Requirements: Transport recyclable waste materials from the Work Area to the recycle containers and carefully deposit in the containers without excess noise and interference with other activities, in a manner to minimize noise and dust. Reclose container covers immediately after materials are deposited.

1. Do not place recyclable waste materials on the ground adjacent to a container.

**PART 2 PRODUCTS (Not Used)**

**PART 3 EXECUTION**

3.01 WASTE MANAGEMENT:

- A. General: Implement waste management procedures throughout the life of this Contract.
- B. Source Separation: Separate, store, protect, and handle at the project site all identified recyclable and salvageable waste products to prevent contamination of materials and maximize recyclability and salvageability of materials.
- C. Arrange for the regular collection, transport from the site, and delivery to respective approved recycling centers of indicated recyclable waste materials. Maintain records accessible to the Architect for verification of construction waste materials recycling.
- D. Delivery Receipts: Arrange for timely pickups from the site or deliveries to approved recycling facilities of designated waste materials to keep construction site clear and prevent contamination of recyclable materials. Keep and maintain records of all deliveries to recycling facilities and all pickups of waste materials at the site by others as specified above.

3.02 RECYCLABLE WASTE MATERIALS HANDLING:

- A. General: The following paragraphs supplement handling requirements for various materials identified for classification and recycling listed in Part 1 "Summary" article above.
- B. Paper: Classify and handle waste paper goods as follows:
  1. Bond Paper: As generally found in the construction offices and used for specifications, correspondence, copiers, printers and FAX machines. Collect in a separate container at each workstation and deposit loose in the appropriate recycle container daily.
  2. Newsprint: Newspapers and tabloid style advertising. Collect in a single location and deposit daily in the appropriate recycle container.
  3. Prints (drawings): Set up a single location for collection. Roll together to minimize space. Deposit daily in the appropriate recycle container.
- C. Packaging materials:
  1. Cardboard and paperboard cartons and boxes: Knock-down, fold flat and deposit in the appropriate recycle container.
  2. Paper packing materials (separators, stiffeners, etc.) shall be placed in the same container.
  3. Newsprint, used as packing (shredded or whole), shall be deposited in the recyclable container for newsprint.
  4. Plastic (polystyrene peanuts and other shapes) shall be deposited in the recyclable container for plastics.
  5. Metal and plastic banding materials shall be deposited in the appropriate container.
- D. Metals: Cut all items to lengths and sizes to fit within the container provided, when necessary. Where there is sufficient quantity of a specific recyclable waste item (for example; salvaged metal roofing or duct work), make special arrangements for items to be bundled, banded or tied, and

- stack in a designated location for a special pick-up. Coordinate all special arrangements with the Architect.
- E. Plastics: Collect recyclable plastics (polystyrene and others specifically marked for recycling) daily from work areas and deposit in designated containers.
  - F. Glass: Remove waste glass products (sheet, bottles, etc.) daily from the work area and deposit in designated containers. Glass containing imbedded wire (typical in some fire rated doors having glazed lights) is not recyclable.
  - G. Gypsum Wallboard: Separate gypsum wallboard from other wastes. Dispose of waste gypsum wallboard off-site at a gypsum reclamation or recycling facility.
  - H. Other Items: Where recyclability classification of any given waste material is unclear, verify with the Architect.

END OF SECTION

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SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Closeout procedures.
- B. Quality assurance.
- C. Maintenance service.
- D. Owner's Manuals
- E. Operations and maintenance manuals.
- F. Materials and finishes manuals.
- G. Equipment and systems manuals
- H. Spare parts and maintenance materials.
- I. Product warranties and product bonds.
- J. Project Record documents.
- K. Project close out inspections – Punch List

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 Architect's review.
- B. Provide submittals to Architect 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, 1994 Edition.
  - 2. AIA Document G706A - Contractor's Affidavit of Release of Liens, 1994 Edition.
  - 3. AIA Document G707 - Consent of Surety to Final payment, 1994 Edition.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. The Owner will occupy all portions of the building as specified in Section 01 10 00.

- E. Provide submittals to Architect that are required by governing or other authorities, including abatement invoices correctly prepared as prescribed in Section 02 81 13. Failure to include correctly prepared abatement invoices will delay issuing of final payment.

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 maximum 2 inch size, D side three - 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 when multiple binders are required.
- 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 one copy of the completed volumes for review. They will be reviewed and returned with the Architect's comments. Revise the content of the manuals as required prior to final submission.
- F. Submit one set of revised final volumes in final form.
- G. Submit one copy of all the manuals for Operations and Maintenance, Materials and Finishes, and Equipment and Systems in PDF electronic format on a Compact Disc or DVD.

## 1.06 OPERATIONS AND MAINTENANCE MANUALS

- A. Contents: Prepare the Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
1. Part 1: Directory, listing the names, addresses, and telephone numbers of the Architect, 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. Photocopies of warranties and bonds.
    - e. MSDS for applicable products.

## 1.07 MATERIALS AND FINISHES MANUALS

- A. 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.
- B. 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.
- C. Include Material Safety Data Sheets (MSDS) for all applicable products. These are required to provide both workers and emergency personnel with the proper procedures for handling or working with a particular substance. MSDS's include information such as physical data (melting point, boiling point, flash point etc.), toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill/leak procedures.
- 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.



I.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 engineering data and tests, and complete nomenclature and model number of replaceable parts.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; by label machine.
- 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.
- P. Additional Requirements: As specified in the individual product specification Sections.
- Q. Include a listing in the Table of Contents.

1.09 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish spare parts, maintenance, and extra products 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. Submit two copies in D side three ring binders with a durable plastic cover.
- F. Submit prior to the final Application for Payment.
- G. Time of Submittals:
  - 1. For equipment or component parts of equipment put into service during construction with the Owner's permission, submit the documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after the Date of Substantial Completion, prior to the final Application for Payment.
  - 3. 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. Construction 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. Construction Record Drawings and Shop Drawings: Legibly mark each item to record the actual construction including:
1. Measured locations of internal utilities and appurtenances concealed in the construction.
  2. Field changes of dimension and detail.
  3. Details not on the original contract construction drawings.
- G. Legibly marked Specifications, and legibly marked Record Construction Drawings and Shop Drawings shall constitute the Project Record Documents.
- H. 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.
- I. At completion of the Work of the Contract, the Architect will furnish the Contractor with an electronic copy of the construction drawings in AutoCad or Autodesk Revit format, and the Project Manual content in Adobe Acrobat PDF format.
- J. Transfer the information from the Project Record Documents onto the electronic documents (Drawings in AutoCad or Autodesk Revit format and the Project Manual in Adobe Acrobat PDF format copied onto a USB flash drive. These documents will constitute the As-Built Documents. Deliver the As-Built Documents to the Architect as two copies on paper and two USB Flash drives. The two paper copies are to be bound and printed full size. Also deliver the paper Project Record Documents to the Architect.
- K. The Architect will review the As-Built Documents and compare them with the Project Record Documents for accuracy, and if necessary return them to the Contractor for final correction. At the time of final submission of the As-Built documents, submit the final Application for Payment.
- L. No review or receipt of record of As-Built Documents by the Architect 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 to the extent they are in accordance with the Contract Documents
- M. At completion of the Work of the Contract submit to the Architect a summary of waste materials, recycled, salvaged and disposed of as outlined in Section 01 74 19. The Summary shall contain the following information:  
For each material salvaged and recycled from the Project, include the amount (in cubic yards or tons or in the case of salvaged items state quantities by number, type and size of items) and the destination (i.e. recycling facility, used building materials yard). For each material land filled or incinerated from the Project, include the amount (in cubic yards or tons) of material and the identity of the landfill, incinerator or transfer station.

- N. At completion of the Work of the Contract submit to the Architect (as outlined in Section 01 74 19) delivery receipts for waste materials salvaged and sent to permitted waste materials processors or recyclers that indicate the location and name of firm accepting recyclable waste materials, types of materials, net weights of each type, date of delivery and value of materials.
- O. At completion of the Work of the Contract submit to the Architect a table indicating information pertaining to construction materials used on the project that includes the following:
- Name of the material
  - Amount of low emissive VOC
  - Percentage of pre-consumer recycled content
  - Percentage of post consumer recycled content
  - Distance product was manufactured from construction site (Greater or less than 500 miles)

Also submit written documentation substantiating the information in the form of a manufacturer's cut sheet, material safety data sheet or letter from the manufacturer.

#### 1.12 PROJECT CLOSE OUT INSPECTIONS - PUNCH LIST

- A. When the work has reached such a point of completion that the building or buildings, equipment, apparatus or phase of construction or any part thereof required by the Owner for occupancy or use can be so occupied and used for the purpose intended, the Contractor, prior to notification to the Architect, shall make a preliminary inspection of the Work to insure that all requirements of the Contract have been met and the Work is substantially complete and is acceptable. Upon such notification, the Owner or the Architect and the consulting Engineers shall make detailed inspection of the Work to insure that all requirements of the Contract have been met and the Work is complete and is acceptable.
- B. Within ten (10) calendar days of notification, the Architect and the consulting Engineers will perform the inspection and a copy of the report of the inspection shall be furnished to the Contractor so that the Contractor may proceed without delay with any part of the Work found to be incomplete or defective. The Contractor shall complete the items listed within thirty (30) calendar days and notify the Owner and Architect
- C. When the items appearing on the report of inspection have been completed or corrected, the contractor shall so advise the Owner and the Architect. After receipt of this notification, the Owner or the Architect and consulting Engineers shall reinspect and inform the Contractor of any remaining items.
- D. The Contractor shall within fourteen (14) calendar days complete the items listed on the inspection report and provide notification of completion and all remaining contract exception, omissions and incompletions from the Contractor, the Owner and the Architect and consulting Engineers will reinspect the Work to verify completion of the exception items appearing on the report of final inspection.

Upon completion of reinspections, the Architect will prepare a certificate of final acceptance or will furnish to the Contractor a copy of the report of the Architect's reinspection detailing Work that is incomplete or obligations that have been fulfilled but are required for final acceptance.

The Contractor shall compensate the Architect and all consulting Engineers for services performed on Punch List inspections beyond the original inspection and two reinspections of the same area through a credit change order reducing the total contract amount.

- E. Upon Substantial Completion of the Work, the Contractor will be paid all retainage, less one hundred fifty percent (150%) of the value attributable to "punch list" work. As items on the punch list are completed, the Contractor will be paid one hundred fifty percent (150%) of their value at the next progress payment.

**PART 2 - PRODUCTS**

Not used.

**PART 3 - EXECUTION**

Not used.

**END OF SECTION**

SECTION 01 81 14

ENVIRONMENTAL IMPACT OF MATERIALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to this section.

1.02 WORK INCLUDED:

- A. Objectives: To obtain acceptable Indoor Air Quality (IAQ) for the completed project and minimize the environmental impacts of the construction and operation, the Contractor during the construction phase of this project shall implement the following procedures singly or in combination:
1. Select products that minimize consumption of non-renewable resources, consume reduced amounts of energy and minimize amounts of pollution to produce, and employ recycled and/or recyclable materials. Obtain Architect's approval of all materials listed in Part 2 prior to placing the order with the manufacturer of the material.
  2. Maintain a materials log book and verification that materials used have been reviewed for environmental considerations as outlined in this section.
  3. Control sources of potential IAQ pollutants by controlled selection of materials and processes used in project construction in order to attain acceptable IAQ as defined in this section.
- B. Products and processes that achieve the above objectives to the extent currently possible and practical have been selected and shown in the Contract Documents. The Contractor is responsible to maintain and support these objectives in developing means and methods for performing the work of this Contract and in proposing product substitutions and/or changes to specified processes.

1.03 RELATED WORK:

- A. Division 1 sections: "Indoor Air Quality Requirements", and "Waste Materials Management and Recycling".

1.04 SUBMITTALS:

- A. Submit the following in accordance with Conditions of the Contract and Division 1 specification sections.
1. Submit as part of the Division 1 Project Closeout documents indicating for each material the VOC content, the recycled content, and the Manufacturer's Safety Data Sheet (MSDS).

1.05 QUALITY ASSURANCE:

- A. As part of the Preconstruction Meeting specified in Division 1 discuss the IAQ and environmental impact compliances required by this Contract. The purpose of this agenda item is to develop a mutual understanding of the IAQ and environmental impact program requirements, and coordination of the Contractor's management of the program with the Architect.

**PART 2 - PRODUCTS**

2.01 MATERIALS:

- A. General: The following special IAQ and environmental impact requirements apply to materials specified in their respective technical specification sections of this Project Manual. See Tables 2.1 and 2.2 for definitions of low VOC content and recycled content.

The following list are qualities requested to be attained to the best ability of the Contractor for each of the described materials in the pursuit to achieve a more environmentally compatible building.

- B. Division 05 - Metals:
1. Structural Steel: Framing steel shall maximize the use of recycled steel.
- C. Division 06 - Wood and Plastics: Wood products:
1. Each specified solid and veneer wood species must originate from a sustainably managed forest certified by a Forest Stewardship Council (FSC) accredited certification group such as Smartwood or Scientific Certification Systems (SCS).
  2. Fiberboard used as blocking, millwork, casework substrate, underlay and door cores must be urea-formaldehyde free, and not exceed ANSI A208.1-1993 emission standard of 0.20 ppm of formaldehyde.
  3. Structural fiberboard (OSB, MDF, and particleboard) shall maximize post-consumer waste material.
  4. Transparent wood finish systems shall utilize only waterborne acrylic sealers and finish coats.
- D. Division 07 - Thermal and Moisture Protection:
1. Building Insulation:
    - a. Insulation materials manufactured using chlorofluorocarbons (CFCs) shall not be used. (CFCs have been completely phased out of U. S. manufactured insulation products.)
    - b. Extruded polystyrene insulation shall not be manufactured with chlorofluorocarbon (CFC) blowing agent and shall maximize recycled content.
    - c. Fiberglass batt insulation, fiberglass board insulation, and mineral wool insulation shall maximize use of recycled material.
    - d. Mineral wool fire safing insulation shall maximize recycled material.
  3. Joint Sealants:
    - a. Interior sealants shall not contain: mercury, butyl rubber, neoprene, SBR (styrene butadiene rubber), or nitrile.
    - b. Silicone sealants shall be low VOC content.
    - c. Polyurethane sealants containing mercury shall not be used.
    - d. Compressible foam joint fillers, polyester polyurethane foam impregnated with neoprene rubber or acrylic ester styrene copolymer used in this facility shall not be manufactured with CFC blowing agents.
    - e. Sealants formulated with aromatic solvents (organic solvent with a benzene ring in its molecular structure) fibrous talc or asbestos, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, or their components shall not be used.

- E. Division 09 - Finishes:
1. Portland Cement Plaster:
    - a. Plaster including additives such as epoxy or other resins shall be low VOC content.
    - b. Steel lath shall maximize recycled steel.
  2. Gypsum Drywall:
    - a. Gypsum board must contain recycled or synthetic gypsum. Facing paper shall be manufactured from recycled newsprint including post-consumer waste.
    - b. Glass fiber sound attenuation blanket insulation shall maximize recycled material.
    - c. Joint compound shall be low VOC content.
    - d. Multi-layer gypsum board applications shall be screw attached and not laminated with adhesives.
    - e. Provide for thorough cleaning and removal of all silica/gypsum dust upon completion of gypsum drywall installations, including, but not necessarily limited to, all components in plenum spaces, including tops of pipes and sills, and insides and outsides of ducts (as required in Division 23).
    - f. Only paper joint tape (no fiberglass tape) will be used.
    - g. Mineral fiber sound attenuation blankets shall maximize recovered material.
    - h. Steel studs, runners, and channels for framing shall maximize recycled steel content.
  3. Acoustic Panel Ceilings:
    - a. Ceiling panels shall maximize use of recycled material, and be finished with water-based low VOC paint.
    - b. Suspension systems shall maximize recycled material.
  4. Paint and Polychromatic Finish Coating:
    - a. Do not use water based paints formulated with aromatic hydrocarbons (organic solvent with a benzene ring in its molecular structure), formaldehyde, halogenated solvents, mercury or mercury compounds, or tinted with pigments of lead, cadmium, chromium VI and their oxides. Water based paints shall be low VOC and shall have a flash point of 61 degrees C or greater.
    - b. Where it is necessary to use solvent-based paints, they shall be formulated for low VOC emissions and shall not be formulated with formaldehyde, halogenated solvents, mercury or mercury compounds, or tinted with pigments of lead, cadmium, chromium VI and their oxides, nor formulated with more than 10% aromatic hydrocarbons by weight.
    - c. The following shall be low VOC and not be formulated with aromatic hydrocarbons (organic solvent with a benzene ring in its molecular structure) formaldehyde, halogenated solvents, mercury or mercury compounds, or tinted with pigments of lead, cadmium, chromium VI and their oxides.
      - High performance water based acrylic coatings.
      - Pigmented acrylic sealers.
      - Catalyzed epoxy coatings.
      - High performance silicone grafted epoxy coatings.
- F. Division 22 – Plumbing:
1. Basic Mechanical Materials and Methods: Use low VOC joint sealers.
  2. Basic Piping Materials and Methods: Use solder that does not contain lead.
  3. Underground Utilities - Basic Piping Materials and Methods: Use solder that does not contain lead.
  4. Pipes and Pipe Fittings: Use solder that does not contain lead.



**Table 2.1 Definition of Low VOC Content Levels**

<u>Material or Product</u>	<u>Low VOC Content Level</u>
Form Release Agents	350 g/L VOC content
Transparent Wood Finish Systems	350 g/L VOC content
Water based Joint Sealants	50 g/L VOC content
Non-water based Joint Sealants	350 g/L VOC content
Gypsum Drywall Joint Compound	20 g/L VOC content
Acoustic Panel Ceiling Finish	50 g/L VOC content
Water-based Paint & Polychromatic finish coatings	150 g/L VOC content
Solvent -based Paint	380 g/L VOC content
High Performance Silicone	250 g/L VOC content

**Table 2.2 Required Minimum Recycled Content of Materials**

<u>Material or Product</u>	<u>Recommended Recycle Content</u>
Framing steel	30% recycled steel 1
Fiberglass batt insulation	20% recycled glass cullet 2
Fiberglass board insulation	20% recycled glass cullet 2
Mineral wool insulation	75% recycled material (slag) 2
Mineral wool fire safing insulation	75% recycled material by weight (slag) 2
Gypsum board	10% recycled or synthetic gypsum
Facing paper of Gypsum Board	100% recycled newsprint including post consumer waste 2
Mineral Fiber Sound Attenuation Blankets	75% recovered material by weight (slag) 2
Steel studs, runners, and channels	60% recycled steel 1
Steel doors & frames	20% Pre-consumer & 50% Post-consumer Recycled content
Acoustic Panel Ceilings	60% recycled material by weight
Ceiling Suspension Systems	60% recycled material 1
Structural fiberboard	80-100% recycled content 2

Notes for Table 2.2:

1. 60% represents the average recycled content for the U. S. steel industry. Use of U. S. manufactured steel will meet this requirement.
2. As per EPA Comprehensive Guideline for Procurement of Products Containing Recovered Materials (60 FR 21370, effective May 1, 1996).

**PART 3 - EXECUTION**

3.01 GENERAL:

- A. Submit to the Architect for review and approval product data such as MSDS and environmental impact data prior to ordering project materials.
- B. Prepare and maintain a Materials Log, providing information on content of materials, where specific materials are to be used, MSDS, and environmental specifications of the material. Maintain the log book weekly as materials are ordered.

3.02 FIELD QUALITY CONTROL:

- A. The Owner reserves the right to take samples and perform, at random, tests of approved materials delivered to the job site to verify compliance of actual materials with specifications.

END OF SECTION

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SECTION 01 81 22

INDOOR AIR QUALITY MANAGEMENT  
DURING CONSTRUCTION

PART 1- GENERAL

1.01 SUMMARY

- A. IAQ Management during Construction
1. Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows:
    - a. During construction meet or exceed the recommended Control Measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, latest edition, Chapter 3.
    - b. Protect stored on-site or installed absorptive materials from moisture damage.
    - c. Replace all filtration media immediately prior to occupancy with MERV 8 filters or higher.

1.02 OVERVIEW

- A. The intent of this IAQ Plan is to:
1. Minimize exposure of construction workers to air pollutants;
  2. Prevent air pollutants from collecting in building systems and on building materials; and
  3. Prevent air pollutants caused by construction from migrating into occupied spaces.
- B. For the purposes of this plan, air pollutants are defined as: Particulates, Volatile organic compounds, Formaldehyde, Combustion emissions, Airborne bacteria and micro-organisms and Airborne inorganic compounds, such as ozone (from electric motors), metal fumes (from smoldering and welding), and ammonia and chlorine (from cleaning products).

PART 2- PRODUCTS

Not used

PART 3-EXECUTION

3.01 HVAC EQUIPMENT AND DUCT WORK

- A. HVAC equipment and ductwork will be protected from dust and other pollutants via the following procedures:
1. Sealing Ductwork and Air Handling Equipment
    - a. Openings into installed or existing ductwork and air-handling equipment not in active use will be sealed using taped plastic, taped cardboard, or other reasonably air-tight coverings. Sealing will occur prior to, or immediately upon installation of the new ductwork or equipment. Regular walk-throughs will be conducted by the Contractor to check for damaged or displaced coverings. Repair or replacement of damaged or displaced coverings will occur immediately upon discovery, at the direction of the Contractor.

- b. Construction work that generates air pollution will be avoided where ductwork or air handling equipment is being installed. If visible air pollutants are present in a space where ductwork is to be installed, spot cleaning or other measures will be used to prevent ductwork or equipment contamination.
- 2. Use of Mechanical Systems during Construction
  - a. Exhaust and makeup air supply systems:  
When a system is operated during construction, its filters will be replaced upon completion of construction with MERV 13 filters.
  - b. Air handling systems will be subject to these provisions when operated during construction:
    - 1. The AHU will be protected with a temporary filter having a minimum rating of MERV 8, per ASHRAE 52.2.
    - 2. Distribution elements needing filters, including all return air ductwork, will be protected with temporary filters having a minimum rating of MERV 8 per ASHRAE 52.2 unless otherwise noted below.
  - c. All components of the distribution on the return side will be protected, including but not limited to:
    - 1. The portion of the air handler upstream of the central fan;
    - 2. Return vents, ducts and shafts;
    - 3. VAV box intakes; and
    - 4. Transfer ducts.
  - d. Components of the distribution system on the supply side will typically not need protection except if portions of the supply system become contaminated, coarse filters will be applied to completely cover supply outlets, to prevent the distribution of particulates into building spaces.
- 3. Filter Replacement and Tracking
  - a. MERV 8 filters used for ductwork protection will be replaced on an as-needed basis, as determined by the Contractor.
  - b. Upon completion, the MERV 8 filters used for ductwork protection will be discarded. New filters will be installed at all air handlers.

### 3.02 TEMPORARY LOCAL EXHAUST

- A. Where available, operable vents and windows will be opened to ventilate the building during application of interior finishes when weather conditions are suitable. Spaces with fixed glazing or no windows will be ventilated by localized temporary exhaust, as described below, or by using building mechanical systems (described above).
  - 1. Local temporary exhaust will be accomplished using fans, duct extensions, and filters.
  - 2. Local temporary exhaust will not discharge near air intakes or other openings that lead into the building.

### 3.03 COVERING OR SEALING SOURCES OF POLLUTION

- A. The following are rules that apply to materials that emit air pollution or odors:
  - 1. Containers containing wet materials will be covered whenever they are not in active use.
  - 2. Waste materials will be covered or sealed and regularly removed from the building.
  - 3. Absorptive materials or materials with an odor will be covered while moved through the building.
  - 4. Whenever possible, material containers will be disposed of with the covers on.
  - 5. Materials that require a surface coating to control pollutants or odors will be coated promptly.

### 3.04 CONTROLLING POLLUTION AT ENTRANCES

- A. Measures will be taken to prevent pollutants from being tracked into interior spaces by workers or equipment. These will include temporary walk-off mats and floor protection.

### 3.05 PROTECTION OF STORED MATERIALS

- A. Measures will be taken to minimize dust accumulation on material surfaces and the absorption of other pollutants by absorbent materials. The measures will include the following:
1. Materials will be handled and stored according to the manufacturer's recommendations.
  2. Unwrapped absorbent materials will be shrink-wrapped if necessary.
  3. Highly absorbent materials like duct liner, acoustic tile, carpeting, or insulation will be stored indoors in the original packaging, or covered and sealed.
  4. Moderately porous materials like gypsum board will be stored indoors, wrapped or away from dust and materials prone to off-gas VOC's.
  5. Framing lumber will be stored indoors whenever possible. If stored outdoors, the lumber will be covered with a water proof covering, stored off the ground, and located away from standing water.
  6. Dense material like glass, metal framing, ductwork and equipment will be covered and kept dry.
  7. If condensation forms on cold material, care will be taken not to expose it to dust or other particles. If exposed to pollution, housekeeping measures will be used promptly to clean the material before installation.

### 3.06 PREVENTING CONTAMINATION OF COMPLETED AREAS FROM WORK UNDER CONSTRUCTION

- A. When work is completed in an area, the area will be protected from pollutants generated in other parts of the building still under construction. One or more of the following methods of pathway interruption will be used:
1. Erecting barriers between completed areas and areas still under construction
  2. Where present, doors and windows will be closed and locked between completed portions of the building and portions of the building still under construction.

### 3.07 HOUSEKEEPING

- A. The following housekeeping measures will be employed throughout construction:
1. A regular housekeeping schedule will be instituted. Cleaning measures and frequency will be selected according to the pollutants generated in a space.
  2. Low-odor cleaning agents will be used.
  3. Spills of water or solvent will be cleaned up immediately.
  4. Attention will be given to cleaning hidden or hard-to-reach surfaces, such as wall cavities, tops of door, ledges, and behind water closets.

### 3.08 SCHEDULING

- A. Construction activities shall be scheduled such that construction and occupancy do not overlap in time. Provide adequate time for carpet, paint and other finishes time to off-gas prior to occupancy.

END OF SECTION

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SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 SECTION INCLUDES

- A. All material, labor and equipment required for demolition and removal of existing structures and items as shown on the drawings and as may be required to permit the proper installation of any new work.

1.03 QUALITY ASSURANCE

- A. Perform work in accordance with all applicable local and state Codes.

1.04 SEQUENCING

- A. Coordinate with the occupancy of the owner under provisions of Section 01 10 00.  
B. Avoid interference with the use of and passage to and from adjacent buildings and facilities.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 PREPARATION

- A. Inspection
1. The contractor shall inspect the entire site, premises and all objects designated to be removed and those to be preserved.
  2. Locate all existing utility lines and determine the requirements for their protection or abandonment.
- B. Notification
1. Notify the owner at least two full working days prior to commencing the work of this section.



- C. Verification
  - 1. Prior to commencing the work of this section, verify with the owner and the Architect all objects to be removed and all objects to be preserved.
- D. Protection
  - 1. Protect all objects and utilities designated to remain as required. Active utilities shall not be interrupted.
  - 2. Provide shoring and bracing for the support of existing structures, that are to remain in place, where necessary to prevent collapse of structures.
  - 3. Dust control shall be as necessary to prevent the spread of dust and flying particles during performance of the work of this section. Provide taped fire resistant polyethylene dust barriers as required. Thoroughly moisten all surfaces as required. Protect HVAC systems from absorbing excessive amounts of contaminants.
  - 4. The contractor shall be responsible to repair or replace all items designated to remain that are damaged due the surrounding demolition.

### 3.02 CLEANING

- A. Clean work under provisions of Section 01 70 00.
- B. Remove all debris and trash from the site on a daily basis and dispose of in accordance with all local and state Codes.
- C. All removed items scheduled to be retained shall be given to the owner for their use.
- D. Burning at the site will not be permitted.

### 3.03 SCHEDULE

- A. Finishes
  - 1. Remove all existing floor finishes, base materials and adhesives in all areas scheduled to receive new finishes unless instructed otherwise. Patch and repair all substrate damaged by removal as required to install new finish.
  - 2. Remove all finishes as indicated on the drawings and as required by new construction. Repair or replace substrate damaged by removals.
- B. Gypsum Board Partitions
  - 1. Remove partitions, blocking, and associated framing indicated to be removed on the drawings and as required by new construction.
  - 2. Remove all appurtenances, equipment and fixtures from partitions to be demolished.
  - 3. Remove all nails, screws and other fastening hardware associated with partitions to be demolished.

C. Concrete

1. Assume all concrete is reinforced.
2. Use a saw cut on all concrete to be removed that butts concrete to remain
3. Always remove concrete in small sections
4. Provide core boring through concrete floors and roofs as required to install new utilities.
5. Remove all concrete slabs, walls or foundations as indicated on the drawings.

D. Masonry

1. Assume all masonry is reinforced.
2. Remove all masonry as indicated on the drawings and as required by new construction
3. All new openings in existing walls will be saw cut.
4. Remove reinforcing flush with surfaces scheduled to remain.
5. Provide core boring through masonry walls as required to install new utilities.
6. Remove all appurtenances, equipment and fixtures from masonry partitions to be demolished.

E. Doors, Windows

1. Remove all doors, frames, hardware, fasteners, sub frame material and anchors from openings indicated on the plans or as required by new construction.
2. Remove window, sub frame materials, and other related items indicated on the plans or as required by new construction.
3. Modify existing openings for new construction as indicated on plans.
4. Provide new lintels as required by new construction.

F. Roofing

1. Provide temporary weather protection at all portions that are open to the weather.

G. Mechanical, Electrical and Plumbing.

1. Refer to the mechanical, electrical, and plumbing drawings and specifications for equipment removal requirements.
2. Provide cutting of holes in floors, partitions or ceilings for all mechanical, electrical, and plumbing as required.
3. Remove all mechanical, electrical, and plumbing equipment and fixtures from partitions to be demolished.
4. Remove all existing fixtures and equipment in areas scheduled to receive new fixtures and equipment unless instructed otherwise.  
Patch and repair all substrate and finishes damaged by removal of items as required to match existing or to prepare for a new finish as scheduled. Dispose of all removed fixtures and equipment unless noted otherwise.

END OF SECTION

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SECTION 02 83 13

LEAD PAINT CONSIDERATIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The Drawings and general provisions of the Contract, including General Conditions, and Division 1 Requirements, apply to the work in this Section.
- B. Section 09 91 00 - Painting

1.02 DESCRIPTION OF WORK

- A. The work of this Section specifies minimum requirements for the disturbance, removal, containment, and disposal of lead-containing paint, building components coated with lead-containing paint, and associated waste generated as a result of paint removal activities as indicated in the Contract Documents.  
All existing paint is to be assumed to contain lead.
- B. The procedures described herein shall apply to all paint removal work where a worker may be occupationally exposed to lead, as well as the disposal requirements of the paint.
- C. The Contractor shall assume that any painted surface, for which representative test results are not otherwise available, to be coated with lead-containing paint. It shall be the Contractor's responsibility to protect workers performing under this Contract.
- D. The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State and local regulations pertaining to work practices, disposal of hazardous waste, protection of workers and visitors to the site. The Contractor shall hold the Owner's Representative and Architect harmless for failure to comply with any applicable work, disposal, safety, health or regulation on the part of themselves, their workers or their subcontractors.
- E. The Contractor is required to ensure the protection of workers performing any work that will affect surfaces coated with lead paint as well as protecting the public and the environment from exposure to lead dust.
- F. The General Contractor is hereby duly made aware of the presence of lead paint to satisfy the hazard communication requirements set forth by OSHA regulations. Specifically, contractors and subcontractors are required to comply with OSHA regulations including 29 CFR 1926.62, *Lead Exposure in Construction: Interim Final Rule* and 29 CFR 1926.59, *Hazard Communication for the Construction Industry*.

1.03 CODES AND STANDARDS

- A. All work shall conform to the standards set by applicable Federal, State and local codes, laws, regulations, ordinances, and guidelines in such form in which they exist at the time of the work on the contract and as may be required by subsequent regulations.

**Museum of Natural History and Planetarium at Roger Williams Park  
Providence, Rhode Island**

**Renovations  
Job No. 21041**

- B. In addition to any detailed requirements of the Specification, the Contractor shall at their own cost and expense comply with all laws, ordinances, rules and regulations of Federal, State, and Local Authorities regarding removal and disposal of lead waste material.
- C. The following regulations and guidelines are cited for the information and guidance of the Contractor. The list below is not all-inclusive; the Contractor shall be responsible for a thorough knowledge and full implementation of all requirements for the removal, transport and disposal of lead-containing materials.
1. U.S. Environmental Protection Agency 40 CFR Parts 260 – 272.
  2. Federal Occupational Safety and Health Administration (OSHA) Title 29 CFR 1910 and 29 CFR 1926, including but not limited to:
    - (a) 29 CFR 1926.62 – Lead in Construction
    - (b) 29 CFR 1910.134 – Respiratory Protection
  3. American National Standards Institute (ANSI) Publications:
    - (a) Fundamentals Governing the Design and Operation of Local Exhaust Systems
    - (b) Practices for Respiratory Protection
  5. National Institute of Occupational Safety and Health (NIOSH) Publications:
    - (a) Manual of Analytical Methods, 4<sup>th</sup> Ed.
  6. Underwriters Laboratories, Inc. (UL) Fire Resistance Directory Publications:
    - (a) 586-77 (R 1982) Test Performance of High Efficiency Particulate, Air Filter Units.
- D. All regulations by the above and other governing agencies in their most current version are applicable throughout this project. It is the Contractor's responsibility to know, understand, and abide by all such regulations and practices. Where there is a conflict between this Specification and the cited State, Federal, or local regulations, the more restrictive or stringent requirements shall prevail.
- 1.04 SUBMITTALS
- A. Contractor's Lead Compliance Program as required by OSHA.
  - B. Site specific work plan identifying specific work areas, procedures, methods, and proposed schedule to be used on project.
  - C. Copies of all notifications, permits, applications, licenses and like documents required by Federal, State, or local regulations.
  - D. Post-Construction submittal package:
    1. Copies of waste manifests and receipts acknowledging disposal of all lead waste material from the project, showing delivery date, quantity, and appropriate signature of landfill's authorized representative,
- 1.05 SPECIAL CONSIDERATIONS
- A. Workers shall be informed of the components to be impacted during renovation that have been

identified as containing lead.

- B. Separation of Trades: Unprotected, untrained workers or trades shall not perform any related work within the same vicinity as work involving components identified with lead.

#### 1.06 REPORT OF FINDINGS

- A. The Contractor shall assume that all paints impacted by the work contain lead.

#### 1.07 FEES, PERMITS & LICENSES

- A. Contractor shall be responsible for costs for all licensing requirements, where applicable and notification requirements, and all other fees related to the Contractor's ability to perform the work in this Section

- B. Secure all necessary permits required to perform the specified work.

#### 1.08 CLEAN UP

- A. Maintain the work site in a neat and orderly manner at all times, so as not to interrupt or infringe upon the work of other trades.

#### 1.09 COORDINATION

- A. At no time shall the Contractor cause or allow to be caused conditions that may cause risk or hazard to the general public or conditions that might impair safe use of the facility.

#### 1.10 DISPOSAL OF WASTE MATERIAL

- A. The Contractor shall comply with all applicable state and local regulations.
- B. Contractor shall comply with all EPA regulations.

### **PART 2 - PRODUCTS**

Not Used

### **PART 3 - EXECUTION**

#### 3.01 SCHEDULING

- A. The Contractor shall coordinate all scheduling with the Owner's Representative.

#### 3.02 IDENTIFICATION OF HAZARDS

- A. The Contractor shall identify all work activities in which a worker may be occupationally exposed to lead.
- B. The Contractor shall initially determine if any worker may be exposed to lead above the action level.

3.03 BARRIERS AND ISOLATION AREAS

- A. Work area isolation for paint removal using hand scraping or abrasive methods or for removal of painted components shall at a minimum be sealed off using plastic sheeting and taped perimeters. Verify actual conditions at site with Architect. Appropriate signage shall be posted around the work area.

3.04 PAINT REMOVAL

- A. All paint chips, slurry, waste, and debris generated from paint removal shall be removed immediately upon generation during the work.

3.05 PERSONAL SAMPLING - CONTRACTOR

- A. Perform personnel air sampling during all renovation work to determine worker exposure limits. The results of such sampling shall be submitted to the Architect.
- B. Air monitoring frequency will be established in accordance with the requirements set forth by OSHA.

3.06 WORK PROCEDURES

- A. The contractor shall initiate, and continue, sufficient engineering and work practice controls, as described in the Contractor's Lead Compliance Program, to reduce and maintain worker exposures to lead at or below the Action Level
- B. The following work practices are specifically required by these specifications:
1. All persons except those directly involved in the work shall be excluded from the work area.
  2. Provide hand-washing facilities and ensure that all workers thoroughly wash their hands and face upon exiting the work area.

3.07 STORAGE OF WASTE

- A. Use of waste containers on site shall be controlled under the following requirements:
1. Wastes shall be handled, packaged, transported and disposed of in accordance with applicable federal and state regulations, codes and laws.
  2. Location of waste containers on site shall be coordinated with the Architect.
  3. Waste containers shall be lined with two layers of six-mil polyethylene sheeting, be solid, enclosed containers, locked and sealed at all times.

END OF SECTION

SECTION - 03 31 10

CONCRETE CONSTRUCTION

PART 1 - GENERAL

- 1.01 SCOPE: Include labor, materials, equipment, appliances and work required for the complete execution of standard Concrete Construction, reinforced and plain, indicated on the drawings or herein specified.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Cement: Cement shall be Portland cement Type I, conforming to ASTM Specification C-150.
- B. Fine Aggregate: Sand for concrete work shall conform to ASTM Specification C-33.
- C. Coarse Aggregate: Coarse aggregate shall be gravel or crushed stone conforming to ASTM Specification C-33.
- D. Water: Water used in mixing concrete shall be clean and free from injurious or deleterious substances.
- E. Metal Reinforcement: Reinforcing bars in general shall conform to the requirements of the "Standard Reinforcement" (ASTM Designation: A-15), and shall be intermediate grade.
- F. Wire Fabric: Welded wire fabric for concrete reinforcement shall conform to requirements of "Standard Specifications for Welded Steel wire Fabric for Concrete Reinforcement" (ASTM Designation A-185).
- G. Metal Accessories and Inserts: Include necessary devices for proper placement of concrete and install sleeves, inserts, bolts as required.
- H. Expansion Joints: Provide 1/2" expansion joint at junction of concrete slab and existing concrete work.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Concrete details shall conform to the current provisions of the A.C.I. Code. Design and strength of concrete shall develop 3000 lbs. per sq. inch at 28 days.
- B. Concrete Mixing: The Contractor shall use ready-mixed concrete. Ready-mixed concrete shall be mixed and delivered in accordance with requirements set forth in "Standard Specifications for Ready-Mixed Concrete" (ASTM Designation C-94).
- C. Metal Reinforcement: Concrete slabs shall be reinforced with 6x6 No. 10 Steel Mesh and/or reinforcing bars of sizes indicated on plans.



D. Placing of Concrete:

1. Concrete slabs shall be placed on well compacted gravel base. Gravel base shall be 8" deep.
2. The placing or depositing of concrete shall be done in accordance with requirements of the A.C.I. Building Code 318-63.

E. Construction Joints: Shall be located only as herein specified, where shown on the drawings or as approved by the Architect. Maximum 20'-0" in all directions.

F. Curing and Protection: Protect all concrete work against injury from elements and defacement of any nature during construction operations.

3.02 CEMENT FINISHED:

- A. Monolithic Finish: Floor slabs shall be finished by tamping the concrete with special tools to force the coarse aggregate away from the surface then screeding and floating with straight edges to bring the surface to the required finish level. While the concrete is still green but sufficiently hardened to bear a man's weight without deep imprint, it shall be wood-floated to a true, even plane with no coarse aggregate visible. Sufficient pressure shall be used on the wood float to bring moisture to the surface. After surface moisture has disappeared, surfaces shall be steel-troweled to a smooth, even, impervious finish free from trowel marks.
- B. Wood Float Finish: Shall be provided for exterior concrete slabs, ramps, stairs and platforms. The surfaces shall be finished by tamping the concrete to force coarse aggregate away from surface, screeding and floating to bring the surfaces to the required finish level and wood-floated to an even, smooth surface.
- C. Exterior Cement Finish: Tread surfaces of exterior platforms and steps shall have non-slip aggregate incorporated in the finish at the rate of 40 lbs. of abrasive to 100 sq. ft. of surface. Tread surfaces to receive a wood float finish. Keep covered with damp sand for 10 days. Vertical surfaces to be steel troweled smooth.

3.03 CONCRETE FLOOR SLAB INFILL:

- A. Following cutting and removing existing concrete floor slab and installation of under-slab utilities provide and install new reinforced concrete infill as follows.
- B. See drawings for location of concrete floor slab infill.
- C. Concrete infill is to be 4" thick of 4000 psi concrete on an 8 inch thick compacted gravel base course. (Unless thicknesses of concrete and base are noted otherwise on the drawings)
- D. Provide reinforcing of w.w.f. 6x6 – w4 x w4 with a 2 inch minimum cover.
- E. Provide new 15 mil vapor barrier above new gravel base.
- F. Pin new concrete infill to existing concrete floor slab using 5/8" diameter 12 inch long steel rods inserted into existing core-drilled slab minimum of 6 inches. Install maximum of 2 feet o.c. around perimeter of infilled area.
- G. Surface of new concrete infill to match level with existing surrounding concrete slab.
- H. New slab surface is to be finished and steel troweled to match finish of surrounding concrete slab or as required to accept new floor finish.

Floor showing trowel marks, swirls, depressions, etc. will be rejected.  
All exposed slabs shall not have any deviations exceeding 1/8" in 10'.  
Finish shall have a hard surface without air pockets or other defects.  
In the event that finishing workmanship is deemed inadequate by the Architect, the contractor shall modify his methods to improve the resulting finish.

END OF SECTION

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SECTION 05 50 00

MISCELLANEOUS METAL WORK

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
 The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 SECTION INCLUDES

- A. Miscellaneous metal work items as described in this Specification Section.
- B. Section includes, without limitation, providing and installing:
1. Shop applied ferrous metals priming paint for miscellaneous metals.
  2. Anchorages, brackets, supports, inserts and backing required for a complete job but not included in other sections.
  3. All other ferrous or non-ferrous metal work not specifically given to other Sections and necessary for a complete job, but including:
    - b. Galvanized steel framing and supports for mechanical and electrical equipment.
- C. Items To Be Furnished Only: Furnish the following items for installation by the designated Sections
1. Miscellaneous items
    - a. Miscellaneous steel trim, galvanized at exterior locations.
    - b. All plates, threaded rods and angles required to support suspended HVAC units and light fixtures from building structure.

1.03 RELATED SECTIONS

- A. Section 09 90 10 -- Painting

1.03 SUBMITTALS

- A. Submit shop drawings, product data under provisions of Section 01 33 00. Include plans, elevations, sections, details, and attachments to other work. Show anchorage and accessory items.
- B. Submit samples of product as requested by the architect. Submit 8" square samples of each metal shop or factory finish (final surface treatment) required. Prepare samples on metal of same alloy and gauge to be used for the work. Label each sample to identify substrate material and finish. Provide hardware samples.
- C. Manufacturer's Data: Submit manufacturer's specifications, anchor details and installation instructions for any prefabricated products to be used in the work of this section

1.04 REGULATORY REQUIREMENTS

- A. Conform to all federal, state, and local codes.

1.05 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Engineering Calculations: Calculations stamped by a registered professional engineer are required for load bearing fabrications. The Structural Engineer's written approval of such calculations shall be obtained before commencing fabrication

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.

1.07 FIELD MEASUREMENTS

- A. Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

**PART 2 - PRODUCTS**

2.01 GENERAL FABRICATION REQUIREMENTS

- A. Welding shall conform to the applicable requirements of the American Welding Society. Welding shall be done in a manner that will prevent permanent buckling and all welds exposed in the finished work shall be ground to an architectural quality smooth appearance approved by the Architect.
- B. Exposed surfaces shall have a smooth finish and sharp, well defined lines. Sections shall be formed to shape and size with sharp lines and angles. Curved work shall be sprung evenly.
- C. Necessary rabbets, lugs and brackets shall be provided so that work can be assembled and anchored in a neat and substantial manner. Holes for bolts and screws shall be drilled. Fastenings shall be concealed where practicable.
- D. Work shall be fabricated and installed in a manner that will provide for expansion and contraction, prevent the shearing of bolts, screws and other fastenings, insure rigidity and provide close fitting of sections. Joints exposed to the weather shall be formed to exclude water.
- E. All galvanized metal shall bear a stamp indicating ASTM number and weight of zinc coating in ounces per square foot.

2.02 MATERIALS

- A. Materials shall conform to the latest edition of the specifications or manufacturer's standards.
1. Steel Shapes ASTM A-36 Bars & Plates

2. Anchor Bolts ASTM A-307 Grade A
  3. Structural Bolts ASTM A-325 (unless shown or indicated otherwise)
  4. Weld Material E70XX Welding Electrodes For manual shielded metal-arc welding, AWS A5.1 or A5.5, E60 or E70 series
  5. Galvanizing ASTM A-123, , or A-153 as applicable; 2.0 ounces zinc per square foot, unless otherwise indicated; provide under its section.
  6. Stainless Steel Type 304L, ASTM A 276
  7. Steel bar gratings ASTM A-569 or A-36
  8. Bitumastic Preservative Mil-P-15230 [Where shown and all embedded steel]
  9. Galvanized Sheet Steel ASTM A-526 or A-526, G-90
  10. Hot-Rolled Carbon Steel Bars (and Bar-Size Shapes): ASTM A-36 or A-529, grade as selected by fabricator.
  11. Brackets, flanges and exposed fastenings: Shall be of the same materials, color and finish as the metal to which they are applied, unless shown or specified otherwise.
  12. Expansion bolts at concrete: Red Head (or equal) wedge anchors.
  13. Expansion bolts at CMU: Hilti (or equal) epoxy/masonry anchors
- B. Hangers and suspension: Where required, provide Uni-strut (or equal) A1000 or assemblies of types recommended by manufacturer for application.
- C. Galvanizing Repair Paint: High zinc dust content paint, ZRC (or equal), having 95% zinc. by weight. Two coats always are required.

### 2.03 SHOP PAINTING

- A. All surfaces of ferrous metal except galvanized steel shall be given a shop coat of red lead, zinc-chromate paint or other approved rust-inhibitive primer unless otherwise specified. All surfaces which will be inaccessible for painting after erection, except contact surfaces of riveted or welded connections, shall be given two coats of paint before being assembled or erected. All marred surfaces of shop coats shall be thoroughly recoated. Field painting is specified under Section 09 91 00.

### 2.04 ANCHORING CEMENT:

- A. Anchoring non-shrink grout shall be Hallemite "Por-rok" or equal.

### 2.05 CLEANING:

- A. Clean under provisions of Section 01 70 00.
- B. The Contractor shall clean the miscellaneous metal work by removing all excess sealants, dirt and foreign materials, restoring finishes, leaving work in a good and satisfactory condition. The Contractor shall perform the work of cleaning using methods and materials as recommended by the manufacturers of the materials used and as approved.

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Review existing field conditions of areas to receive the work of this Section before

proceeding with fabrication. Do not proceed with installation of metal fabrications until all unsatisfactory conditions which would impair the strength or appearance of the work have been corrected.

### 3.02 INSTALLATION OF METAL FABRICATIONS

- A. **Fastening to In-Place Construction:** Provide anchorage devices and fasteners and furnish all necessary setting drawings, diagrams, and templates where necessary for securing miscellaneous metal items to in-place construction including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required. Use galvanized bolts at exterior. Coordinate delivery of such items to project site.
- B. **Cutting:** Perform cutting, drilling and fitting required for installation of miscellaneous metal items. Do not cut structural members in field to facilitate fitting without written permission of the Architect for each specific condition.
- C. **Fitting:** Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind joints smooth. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
- D. **Placement:** Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry or similar construction.
- E. **Field Welding:** Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work. Do not field weld stainless steel or aluminum.
- F. **Grouting:** Set bearing plates required for support of the work of this Section level and to correct elevation using steel shims or wedges and grout solid using specified non-shrink grout.
- G. **Touch-Up of Shop Primers:** Touch up field welds and unprimed steel using specified shop primers and following procedures specified for shop work.
- H. **Existing work:** Remove and re-install or re-locate existing metal fabrications as required to complete the work. Drill, tap, or weld existing assemblies as required to complete the work and to attach existing work to new work.

### 3.03 PRODUCTS

- A. **Anchors and Bolts:**  
Anchors and bolts shall be provided where indicated and where necessary for fastening work in place. They shall be embedded in concrete and masonry as the work progresses. Sizes, kinds and spacing of anchors not indicated or specified shall be as necessary for their purpose.

- B. Steel:  
 Steel for the support of piping and appurtenances shall be provided to the details indicated and as necessary for the complete installation.
- C. Pipe Hangers and Miscellaneous Supports:  
 Pipe hangers and miscellaneous supports shall be provided as required.
- D. Miscellaneous Framing and Supports:
1. Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required.
  2. Fabricate miscellaneous units to sizes, shapes and profiles shown or, if not shown, of required dimensions to receive work to be supported by framing. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.
  3. Equip units with integrally welded anchor straps for casting into poured concrete or building into masonry wherever required. Furnish concrete inserts if units must be installed after concrete is placed.
- E. Metal support framing:
1. Provide metal framing as required to support light fixtures, piping, HVAC equipment and ductwork below hard or acoustical ceilings or as required to span across/over/under suspended equipment. Coordinate with the associated MEP contract documents.

### 3.04 REPAIR OF ZINC COATINGS:

- A. All zinc coatings that have been damaged in handling or transporting or in welding, riveting or bolting shall be repaired by the application of a thick paste made from galvanizing repair compound conforming to Federal Specification 0-G-93 and water. Areas to be repaired shall be cleaned thoroughly, including removal of slag on welds, before the paste is applied. Surfaces to be coated with paste shall be heated with a torch so that all metallics in the paste will be melted when applied to the heated surfaces. Extreme care shall be taken to see that adjacent zinc-coated surfaces are not damaged by torch. Molten metal shall spread uniformly over all surfaces to be coated and the excess metal wiped off.

### 3.05 FIELD PAINTING

- A. Specified as scheduled under Section 09 91 00 - Painting.

### 3.06 DISSIMILAR MATERIAL

- A. Where aluminum comes in contact with metals other than stainless steel, zinc, white bronze or other metals compatible with aluminum, then those surfaces shall be kept from direct contact by painting the dissimilar metal with a coating of heavy-bodied bituminous paint, a good quality caulking placed between the metals, non-absorptive tape or gasket.

END OF SECTION



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SECTION 06 20 10

CARPENTRY AND MILLWORK

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 SECTION INCLUDES

- A. All labor and materials, equipment and installation of all work required to complete the construction and installation of all work required to this trade as indicated on the drawings and as herein specified.

1.03 RELATED SECTIONS

- A. Section 09 91 00 – Painting

1.04 REFERENCES

- A. American Plywood Association  
B. American Woodwork Institute

1.05 SUBMITTALS

- A. Submit shop drawings, product data and samples under provisions of Section 01 33 00.

1.06 QUALITY ASSURANCE

- A. Work shall comply with all local and state building and fire codes.  
B. Material and workmanship of all woodwork shall conform to the Premium grade requirements of the AWI Quality Standards.  
C. Rough Carpentry Lumber: Visible grade stamp, of agency certified by National Forest Products Association (NFPA).

1.07 REGULATORY REQUIREMENTS

- A. All materials are to conform to the minimum requirements of the State Building Code or as indicated in this specification, whichever is stronger or stricter.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.

- B. Protect all materials from weather. Do not store in damp or wet areas. Stack lumber and plywood, and provide air circulation within stacks.

1.09 FIELD MEASUREMENTS

- A. Verify all field dimensions at the site prior to fabrication.

1.10 COORDINATION

- A. Coordinate work with other trades and under provisions of Section 01 31 00.

**PART 2 - PRODUCTS**

2.01 MATERIALS

A. Framing Lumber

1. Moisture content when delivered to the project shall not exceed 19 percent.
2. Wood studs, blocking, bridging, nailing pieces, shall be Douglas Fir, Coast Region construction grade "J" and "P" or Southern Pine No. 1. All structural load bearing lumber shall be of quality to provide 1200 psi units fiber stress.
3. Mark of treating company certifying type of treatment applied on fire retardant treated and pressure preservative treated lumber.

B. Plywood shall be of the types and grades listed below:

1. Exposed exterior plywood to be American Plywood Association A-C, Group 1, Exterior, in thickness as noted on the drawings. Where thickness is not indicated, plywood shall be 3/4" thick.
2. Exposed interior plywood to be American Plywood Association A-C, Group 1, Exposure 1, in thickness as noted on the drawings. Where thickness is not indicated, plywood shall be 3/4" thick.
3. Each panel of plywood shall be identified with a stamp as to type, grade and species by the grade trademark of the American Plywood Association.  
Mark of treating company certifying type of treatment applied on fire retardant treated and pressure preservative treated plywood.
4. All sheathing plywood shall be in accordance with Chapter 23 of the State of Rhode Island Building Code.

C. Interior and Exterior Woodwork for Paint Finish

1. Quality: Wood shall be free from knots, pitch or sap streaks, molded and executed as detailed and noted on the drawings.
2. Species: Wood shall be clear, kiln-dried close-grained hardwood unless otherwise indicated.

D. Interior Woodwork for Transparent Finish

1. Quality: Wood shall be free from pitch or sap streaks, molded and executed as detailed and noted on drawings.
2. Species: All wood and plywood shall be red oak unless otherwise indicated.

- E. Wood Treatment
1. Wood preservative used to treat the wood materials shall be alkaline copper quaternary (ACQ).
  2. Treat wood materials requiring pressure impregnated preservatives to FS TT-W-571, Table 3.
  3. Deliver treated materials cut to required sizes. Minimize field cutting.
  4. Re-dry wood after pressure treatment to maximum 19 percent moisture content.
  5. Use stainless steel fasteners where installed in pressure treated wood.

### **PART 3 - EXECUTION**

#### **3.01 CONSTRUCTION**

- A. Rough Carpentry
1. **General:** Carefully lay out, cut, fit and rout all framing, blocking and other items of carpentry in such a manner as to minimize shrinkage and insure stability. Perform all carpentry work required for building in work of other trades and work to the details indicated and as required by field conditions.
  2. Provide fire retardant treated wood products as shown and as follows:  
 At exposed or semi-exposed wood in fire rated assemblies and in spaces having limited flame spreads for exposed combustibles. Where blocking is concealed in fire rated assemblies and all areas as required by code.
  3. Includes: Rough carpentry shall consist of the installation of sleepers, blocking, nailers, curb nailers, furring, joists, studding, rafters, stringers, centers, rough flooring, grounds, screeds, and such other items of rough carpentry as may be required for proper construction and to complete the work. Absence of illustration, detail or specification will not relieve the Contractor from responsibility or carrying out the work.
  4. Lumber and other rough work shall be properly framed closely fitted, accurately set to the required lines and levels and rigidly secured in place.  
 Joists and rough stair stringers shall be set with the crown edge up, and the bottom edges shall be free from pronounced defects.  
 Leveling of sills, etc., on masonry or concrete shall be done, as required and grouted with cement mortar.  
 Studs and joists shall be sized to give true surfaces for finish.  
 Nailing and spiking shall be done in a thorough manner with nails of ample size, spikes larger than 20d being used where practicable.  
 Special framing or construction, not explicitly shown on drawings or specified, shall be provided as required to complete the work in the best and most workmanlike manner.
  5. Mechanical equipment clearances: Members shall be framed to allow for passage of pipes or ducts as required to avoid cutting of structural members. No members shall be cut, notched or bored for the passage of such pipes without permission of the Architect, and all members damaged by cutting shall be reinforced as directed by the Architect.
  6. Preservative treated lumber: All wood in direct contact with concrete, masonry, soil or gravel shall be preservative treated wood, ground contact grade with a 40 year warranty. Wood shall be free from large or loose knots, shakes, checks and warpage. Apply two coats of same preservative used in original treatment to all sawn or cut surfaces of treated lumber, in accordance with AWPA M4.  
 Use stainless steel fasteners where installed in the pressure treated wood.

7. Studs: Studs shall be no less than 2"x4", spaced not over 16 inches on center, unless otherwise shown. Studs shall be doubled around all openings. Corners shall be thoroughly spiked together and made solid. All bearing partitions shall be provided with double top and bottom plates. Partitions shall have one row of horizontal bridging for the full width of studding, cut in and securely nailed. Studs shall be framed as shown or required for the proper installation of trim, plumbing, and other work to be concealed. Studding shall be installed for the support of all fixtures and accessories as required.
  8. Furring and Grounds: Shall be minimum 1" x 3" strips, as shown on drawings or as required to match the condition, spaced maximum 16" on center and continuous at all vertical edges of framed openings. Furring shall be secured to concrete, brick or masonry units by power driven fasteners. Face of furring and grounds shall form a true, even plane for installation of materials thereon. Species shall be Fir or Southern Pine, at Contractor's option.
  9. Trim
    - a. Trim shall be mitered and jointing shall be tight and formed to conceal shrinkage. All mortise, tongue-and-groove and shiplap joints shall be set in neutral white caulking compound. Interior woodwork shall be back primed and painted before installation.
    - b. Interior trim shall be milled, fabricated and erected as shown on the drawings. All finishes shall be machine-sanded at the mill and sand-papered and primed at the job.  
 Wood used for trim is to be any close-grained hardwood.  
 All interior trim including base, chair rails, ceiling mouldings, casings, window stools and aprons shall be of stock designs. All joints shall be made in an approved manner to conceal shrinkage and shall be tight, straight, plumb and level, in perfect alignment and closely fitted. Joints shall be secured with finish nails set for putty stopping. Window and door trim shall be in single lengths. Base shall be in long lengths. Mouldings shall be mitered at corners and coped at angles. These joints shall be made at the mill.
  10. Temporary Enclosures and Protection: Temporary enclosures of doors, windows and other exterior openings shall be provided when necessary to meet conditions specified. Maintain in good repair and remove when no longer required. Door and window frames shall be protected from traffic and from mortar drippings.
- B. Blocking
1. Blocking layout and size: Continuous and solid, fire retardant 3/4 inch plywood or fire retardant 2x4 or larger where additional support is required.
  2. Provide blocking in addition to any indications on the drawings in locations as follows:
    - a. Millwork attached to walls or ceilings.
    - b. All standing and running trim
    - c. Equipment attached to walls or ceilings.
    - d. At grab bars.
    - e. Toilet Room accessories.
    - f. Handrail brackets.
    - g. Wall hung lavatories.
    - h. At cabinets and casework.
    - i. At window shades, blinds or drapes brackets or hardware and FF&E work.
    - j. As required to support light fixtures.

3. Attach blocking as follows:
  - a. In metal stud partitions: Screw attach through stud flanges.
  - b. At masonry: With oval head toggle bolts and washers or with epoxy tube and sleeve systems.
  - c. At concrete: With expansion shield bolts.
  - d. At steel: With flat head bolts/nuts or approved power actuated fasteners.
- C. Construction Hardware
  1. Furnish and install all bolts, nuts, expansion shields, lag screws, toggle bolts, wood screws, nails, flat cap metal nailing discs, staples, power driven anchors and other rough hardware as required.
  2. Rough hardware items shall be of appropriate type and proper capacity and size as required for each specific application.
  3. All fasteners used on exterior work shall be hot dip galvanized or stainless steel.
  4. Concrete and masonry anchors: Where anchors are not included in concrete or masonry construction sections, anchors shall be galvanized machine screws or bolts with standard expansion-shield type concrete anchors, Phillips "Red Head" Masonry Anchors or approved equal, of sizes and types as required.
  5. Fasteners used at treated wood: Fasteners meeting manufacturers approval and requirements if not listed use stainless steel.

### 3.02 CLEANING

- A. Clean work under provisions of 01 70 00.

### 3.03 PROTECTION OF FINISHED WORK

- A. Protect finished work under provisions of Section 01 70 00.

END OF SECTION

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SECTION 07 21 13

BOARD INSULATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Board insulation.

1.02 REFERENCES

- A. ASTM C578 - Physical properties of Polystyrene.

1.03 SYSTEM DESCRIPTION

- A. Materials of this Section shall provide a continuous thermal barrier at building enclosure elements.

1.04 SUBMITTALS

- A. Submit manufacturer's installation instructions under provisions of Section 01 33 00.
- B. Sustainable Building Material Submittal:
1. For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.
    - a. Include statement indicating costs for each product having recycled content.
  2. Identify each regional material along with the location of its harvest, extraction, or manufacture.

PART 2 - PRODUCTS

2.01 ACCEPTABLE INSULATION MANUFACTURERS

- A. Subject to compliance with requirements of this Specification Section, provide products listed herein from one of the following:
1. Dow Chemical Co
  2. Owens Corning
  3. DiversiFoam
- B. Basis of Design: Styrofoam Brand by Dow Chemical Co
- C. Substitutions: Under provisions of Section 01 60 00.



## 2.02 INSULATION MATERIALS

- A. Insulation for furred-out gypboard against concrete block exterior walls shall be Styrofoam Square Edge: extruded cellular polystyrene; square edges. Thickness to be 1.5", unless noted otherwise. Comply with ASTM C 578, Type IV, compressive resistance 25 psi (ASTM D 1621). Water absorption: Max. 0.1% by volume (ASTM C 272) Surface burning characteristics: Flame spread=5, Smoke developed=165

## 2.03 ADHESIVE MATERIALS

- A. Adhesive: Type as recommended by insulation manufacturer.
1. Acceptable manufacturer's products:
    - a. ChemRex, Inc. "Contech Brands PL300 Foam Board Adhesive".
    - b. ChemRex, Inc. "Contech Brands Premium Foam Board Adhesive".
    - c. Dacar Products, Inc. "Foamgrab PS".

## 2.04 SPRAY FOAM GAP INSULATION:

- A. Manufacturer
1. Subject to compliance with requirements of this Specification Section, provide products listed herein from one of the following:
    - a. Dow Chemical Co
    - b. Hilti
    - c. Todol
  2. Basis of Design: Dow Great Stuff Pro Gaps & Cracks Insulating Foam Sealant.
  3. Substitutions: Under provisions of Section 01 60 00.
- B. Material: Sprayed-in-place expanding urethane foam with the following characteristics:
1. Materials: One-component, water-cure closed cell polyurethane containing no urea-formaldehyde and no CFCs ; maximum 100% expansion.
  2. Thermal Performance: Approximately R6 per inch.
  3. Burn Characteristics: ASTM E 84, flame spread less than 25, smoke development less than 210, fuel contribution 0.
  4. Water Absorption: Hydrophobic.
  5. Closed-Cell Formulation: 80% per ASTM D 2856.
  6. Expansion rate: As recommended by manufacturer for application:
  7. Must be approved by the manufacturer to be compatible with the adjacent board insulation.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Verify substrate and adjacent materials and insulation boards are dry and ready to receive insulation and adhesive.
- B. Verify substrate surface is flat, free of fins, irregularities and materials that will impede adhesive bond.

- C. Verify insulation boards are unbroken, free of damage.

### 3.02 INSTALLATION – FURRED-OUT WALLS

- A. Verify that masonry joints are struck flush and remove concrete fins and mortar projections that will interfere with placement of the insulation boards.
- B. Apply adhesive in 2” diameter spot applications 12” o.c. both ways in accordance with manufacturer's recommendations. Butt tight against the studs, ceiling/deck and floor. Fill all gaps or voids with the spray foam gap insulation.
- C. Install boards vertically between studs or furring.

### 3.03 CLEANING

- A. Clean work under provisions of Section 01 70 00.

END OF SECTION

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SECTION 07 84 13

FIRESTOPPING

PART 1 – GENERAL

1.01 SUMMARY

- A. Related Documents:  
 The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 RELATED SECTIONS

- A. Division 22 - Plumbing  
 B. Division 26 -- Electrical

1.03 DESCRIPTION OF WORK

- A. The work of this Section consists of the provision of all plant, materials, labor and equipment and the like necessary or required for the complete execution of all firestopping and smoke seal work for this project as required by the schedules, keynotes and drawings, including, but not limited to the following:

NOTE – Firestopping is defined as a material, or combination of materials, to restore the integrity of fire rated walls and floors by maintaining an effective barrier against the spread of flame, smoke and toxic gases.

1. Provide firestopping and smoke seals as indicated on the drawings and as required to maintain full and continuous smoke and fire barrier between zones.

Seal all penetrations between floor/ceiling plane with expanding foam. No fiber insulation packing is permitted.

Cope and seal around all structural elements to insure smoke and fire barriers.

2. Provide firestopping of all openings in floors and walls both empty and those accommodating penetrating items such as cables and wires, cable trays, conduits, pipes, ducts, etc.; coordinate with Divisions 21, 22, 23 and 26.
3. Provide firestopping at joints between curtain walls and floor or roof openings and balance of openings between exterior walls and connecting floor assemblies at each floor.
4. Pack expansion joints in fire rated walls and floors;
5. Provide firestopping of openings at each floor level in shafts or stairwells.

#### 1.04 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
  - 1. E 814 – Standard Method of Fire Tests of Through Penetration Fire Stops.
  - 2. E 119 – Methods of Fire Tests of Building construction and Materials.
  - 3. E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. Underwriters Laboratories, Inc. (UL)
  - 1. UL 1479 – Fire Tests of Through Penetration Fire Stops.
  - 2. UL 263 – Fire Tests of Building Construction and Materials.
  - 3. UL 723 – Surface Burning Characteristics of Building Materials.
  - 4. UL “Fire Resistance Directory” current year.
- C. Factory Mutual (FM) Approval Guide, current year.
- D. Building code of the jurisdiction of the work.
- E. National Fire Protection Association
  - 1. NFPA 101 – Life Safety Code.
  - 2. NFPA 70 – National Electrical Code.

#### 1.05 QUALITY ASSURANCE

- A. Firestopping materials shall conform to both Flame (F) and Temperature (T) ratings as tested by nationally accepted test agencies per ASTM E 814 or UL 1479 fire tests.
 

The F rating and T rating must be a minimum of 1 hour but not less than the fire resistance rating of the assembly being penetrated.

The fire test shall be conducted with a minimum positive pressure differential of 0.03 inches of water column.
- B. Firestopping shall be performed by a Specialty Contractor trained or approved, in writing, by firestop material manufacturer. Said specialist shall be as defined in the conditions.
 

Equipment used shall be in accordance with firestop material manufacturer's written installation instructions.
- C. Materials shall conform to all applicable governing codes.
- D. All materials used in the work shall be certified “asbestos free” and shall be free from any and all solvents or components that require hazardous waste disposal or, that after curing, dissolve in water.
- E. All materials shall comply with the interior finish flame spread and smoke developed requirements for the area in which they are installed. Coordinate with governing codes.

#### 1.06 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Certification of specification compliance of all materials.
- C. Manufacturer's printed product data and drawings indicating product characteristics, performance, detail applications and limiting criteria.  
  
 Submittal shall include applicable UL and/or FM assembly numbers for each material and proposed installation.
- D. Manufacturer's installation instructions for each type of firestop required by the project.
- E. Manufacturer's approval of nominated installer of firestopping and smoke seal products.
- F. Mockups:
  - 1. Prepare job mockup of the material proposed for use in the project as directed by Architect.  
 Approved markups shall be left in place as part of the finished project and will constitute and standard for remaining work, including aesthetics.
- G. Manufacturers Material Safety Data Sheet (MSDS) must be submitted for each manufactured product.

#### 1.07 PRODUCT DELIVERY STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
- B. Deliver all materials to be used in the work of this section to the project site in original sealed containers with manufacturer's brand and name, lot numbers, UL labeling, mixing and installation instructions clearly identified thereon.
- C. Store all materials in accordance with manufacturer's directions.  
  
 All materials shall be dated with shelf life and shall be removed from the project site at the contractor's expense if date is expired.

#### 1.08 PROJECT CONDITIONS

- A. Conform to manufacturer's printed instructions for installation and when applicable, curing in accordance with temperature and humidity. Conform to ventilation and safety requirements.
- B. Coordinate work required with work of other trades; firestopping shall, where practical, precede gypsum board or other applied sheet finishing operations.
- C. Where firestopping is installed at locations which will remain exposed in the finished work, provide protection as necessary to prevent damage to adjacent surfaces and finishes, and protect as required against damage from other construction operations.

- D. Adhesive and sealants use in the building interior [i.e., inside the exterior moisture barrier] shall not exceed VOC content limits of:
1. Provisions of 01 81 10 Environmental Impact of Materials.
  2. Aerosol Adhesives: Green Seal Standard GC-36.

#### 1.09 PREINSTALLATION CONFERENCE

- A. A preinstallation conference shall be scheduled in accordance with Section 01 31 00 by the contractor with this specialty contractor and all other specialty contractors, subcontractor and the like to establish procedures to maintain optimum working conditions and to coordinate the work of this section with related and adjacent work.

#### 1.10 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements, and comply with the following:
1. Coordinate work of this section with similar work being performed by certain trades for their own work.
  2. All firestop work not performed by trades shall be performed under this section.
  3. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.
  4. Notify the Architect at least seven days in advance of through-penetration firestop system installations; confirm dates and times on days preceding each series of installations.
  5. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until the Architect and building inspector, if required by authorities having jurisdiction, have examined each installation.

### **PART 2 – PRODUCTS**

- 2.01 SPECIFICATION STANDARD: For purposes of establishing standards of quality and levels of performance and not for the purposes of limiting competition, the basis of this specification is upon units as manufactured by one of the following and their respective model suitable for the intended application.

- A. Bio Fireshield, Inc.; Damonmill Square, Concord, MA 01742.
1. Novasit K-10 Firestop Mortar
  2. K-2 Firestop Mortar
  3. Biotherm Firestop Sealants and Caulk
  4. Firestop Sleeve
  5. Firestop Pillows
  6. Biostop 500 Intumescent Caulk
- B. IPC Corp.
1. KBS Mortar Seal
  2. Flamesafe Sealants and Caulk
  3. FPS 1000 Putty and 1077 Putty Pads
  4. Firestop Kits – FSK200
  5. KBS Seal Bags
  6. Quelpyre Tapes and Blankets

- C. Dow Corning
  - 1. Firestop Sealant #2000
  - 2. Firestop Foam #2001
  
- D. 3M Corporation
  - 1. Fire Barrier Caulk, CP-25WB
  - 2. Fire Barrier MPS-2 Putty and 4S Putty Pads
  - 3. Fire Barrier Intumescent Wrap Strip #FS-195
  
- E. Nelson Firestop Products
  - 1. FSP Firestop Putty
  - 2. CMP Firestop Compound
  - 3. CLK Firestop Sealant
  - 4. PLW intumescent Pillow
  - 5. PCS Preformed Collar for Plastic Pipe Penetrations
  - 6. MPS Multi-Plug
  - 7. MCT Multi-Cable Transit
  - 8. EMCT Multi-Cable Transit and Plug
  - 9. CTG Firestop Coating
  - 10. CPS Composite Sheet
  
- F. Tremco, Inc.
  - 1. Fyre-Sil and Fyre-Sil SL
  - 2. Fyre-Shield
  - 3. THC-900/901
  - 4. Dymeric, Dymonic Sealant Systems
  - 5. Compatible forming systems.
  
- G. General Electric
  - 1. Pensil 100 Sealant
  - 2. Pensil 200 Foam
  - 3. Pensil 300 Joint Sealant
  - 4. Pensil 500 Putty
  - 5. Compatible forming systems.
  
- H. U.S. Gypsum Company
  - 1. U.S.G. "Thermafiber" unfaced safing insulation with third party wrap, 3.5 pcf density, UL R-10905 label.
  - 2. U.S.G. "Firecode" compound.
  
- I. Hilti Corporation
  - 1. Hilti CP 645 insulated firestop sleeve to replace existing pipe insulation

## 2.02 ACCESSORY ELEMENTS

- A. Forming, damming materials shall be mineral fiber board or other suitable material recommended by nominated system manufacturer.



- B. Primers, sealant and solvent cleaners shall be as recommended by the nominated system manufacturer.
- C. Metal Systems – 20 gauge phosphatized, electrogalvanized steel plate or galvanized steel clips.

### **PART 3 – EXECUTION**

#### **3.01 INSPECTION AND ACCEPTANCE**

- A. Examine all surfaces and contiguous elements to receive work of this section and correct, as part of the work of this contract, any defects affecting installation.
- B. Commencement of work will be construed as complete acceptability of surfaces and contiguous elements.

#### **3.02 PREPARATION**

- A. The surface shall be dry, clean, and free of all foreign matter.
- B. Do not apply firestopping to surfaces previously painted or treated with a sealer, curing compound, water repellent or other coatings unless tests have been performed to ensure compatibility of materials.
- C. Provide primers as required which conform to manufacturer's recommendations for various substrates and conditions.
- D. Mask where necessary to protect adjoining surfaces.
- E. Remove excess material and stains on surfaces as required.

#### **3.03 INSTALLATION – GENERAL SYSTEMS**

- A. Install in strict accordance with manufacturer's printed instructions.
- B. Ensure that anchoring devices, backup materials, clips, sleeves, supports and other materials used in the actual fire test are installed.
- C. Install firestopping with sufficient pressure to properly fill and seal openings to ensure an effective smoke seal.
- D. Tool or trowel exposed surfaces. Remove excess firestop material promptly as work progresses and upon completion.
- E. Install dams when required to properly contain firestopping materials within openings and as required to achieve required fire resistance ratings. Combustible damming materials must be removed after appropriate curing. Incombustible damming materials may be left as a permanent component of the firestopping systems.

3.04 FIRESTOPPING CONSTRUCTION AT BUILDING EXTERIOR PERIMETERS, INTERIOR WALLS, SHAFTS, ETC.

- A. Install material of proper size on continuous plates or clips as required for proper support in order to safe-off area between exterior walls, interior walls and shafts and floor slabs, said walls and roof areas leaving NO VOIDS.
- B. Firestopping is required at all juncture conditions whether or not clips, angles or other structural elements exist either intermittently or continuously.
- C. Attach plates and clips to floor levels and other breaks and extend through framing to sheathing or other solid strata.
- D. Where metal decking flutes, either parallel or perpendicular to walls, occur and are open, same shall be fully packed and sealed with proper firestopping system.
- E. Where firestopping is accomplished after installation of drywall or other applied sheet finish, all spaces between penetrations and finish shall be filled to the thickness of said sheet finish with intumescent caulk.
- F. At all linear openings, fill voids with a minimum of 6 inches of minimum 3.5 lb./cu. ft. density safing insulation as specified in Part 2 herein and cover entire surface with UL listed firestop sealant of one of nominated manufacturers identified in Part 2 herein.

3.05 PENETRATION SEALS

- A. Penetrations are defined as conduits, cables, wires, piping, ducts or other elements passing through one through one or both outer surfaces of fire rated walls, floors or partitions and shall be firestopped on both sides of penetration in accordance with requirements set forth in Paragraph 1.04 of this Section.
- B. Where sleeves are used, same shall be as specified in Part 2 herein; in event that sleeves are not used, core openings and caulk penetrating items with intumescent system the full length of penetration and seal on both sides with intumescent caulk.
- C. Residual openings within square or rectangular holes shall be filled with compounds applicable for substrate encountered and all penetrations sealed on both sides with caulk.
- D. Where existing pipes penetrate new partition, replace existing pipe insulation with new insulated firestop sleeve and seal perimeter of remaining opening on both sides with caulk.

3.06 FIELD QUALITY CONTROL

- A. Contractor shall immediately notify the Architect if the firestopping systems herein specified cannot meet the requirements of the specification.
- B. Contractor shall examine firestops to ensure proper installation and full compliance with this specification.
- C. All areas of work must be accessible until inspection by the applicable code authorities.

- D. Correct unacceptable firestops and provide additional inspection to verify compliance with this specification at no additional cost.

3.07 CLEANING

- A. When finished work will be visible, clean adjacent surfaces in accordance with manufacturer's printed instructions.
- B. If visible in the finished work, remove temporary dams after initial cure of firestops.
- C. Correct staining and discoloring on adjacent surfaces.
- D. Remove all debris and excess materials entirely from site and leave work in a neat and clean condition.

END OF SECTION

SECTION 07 92 13

JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Acoustical joint sealants.

B. Related Sections:

1. Division 04 Section "Unit Masonry" for masonry control and expansion joint fillers and gaskets.
2. Division 08 Section "Glazing" for glazing sealants.
3. Division 09 Section "Gypsum Board" for sealing perimeter joints.
4. Division 09 Section "Tiling" for sealing tile joints.

1.3 PRECONSTRUCTION TESTING

- A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
  2. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: For each joint-sealant product indicated.
- C. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

- D. Joint-Sealant Schedule: Include the following information:
    - 1. Joint-sealant application, joint location, and designation.
    - 2. Joint-sealant manufacturer and product name.
    - 3. Joint-sealant formulation.
    - 4. Joint-sealant color.
  - E. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.
  - F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.
  - G. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
    - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
    - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- 1.5 QUALITY ASSURANCE
- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
  - B. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.
  - C. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
- 1.6 PROJECT 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. Warranty Period: Two years from date of Substantial Completion. Provide under the provisions of Section 01 78 00.

## **PART 2 - PRODUCTS**

### 2.1 MANUFACTURERS

- A. Manufacturers as listed below

- B. Substitutions: Under provisions of Section 01 60 00.

## 2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):
1. Architectural Sealants: 250 g/L.
  2. Sealant Primers for Nonporous Substrates: 250 g/L.
  3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full standard range.

## 2.3 SILICONE JOINT SEALANTS

- A. Mildew-Resistant, Single-Component, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Dow Corning Corporation; 786 Mildew Resistant.
    - b. GE Advanced Materials - Silicones; Sanitary SCS1700.
    - c. Tremco Incorporated; Tremsil 200 Sanitary.
- B. Single-Component, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT, M, G, A and O.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Dow Corning Corporation; 790.
    - b. GE Advanced Materials: SilPruf SCS 2700 LM
    - c. Tremco Incorporated; Spectrem 3
- C. Single-Component, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT, G, A and O.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Dowsil 795 Silicone structural Sealant.
    - b. GE Advanced Materials: SilPruf SCS - 2000
    - c. Tremco Incorporated; Spectrem 2
    - d. Pecora 864 Silicone

## 2.4 URETHANE JOINT SEALANTS

- A. Single-Component, Nonsag, Urethane Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:
  - a. Pecora Corporation; Dynatrol I-XL.
  - b. Sika Corporation, Construction Products Division; Sikaflex - 1a.
  - c. Tremco Incorporated; Dymonic 100

## 2.5 ACOUSTICAL JOINT SEALANTS

- A. 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. Products: Subject to compliance with requirements, provide one of the following:
    - a. Pecora Corporation; AC-20 FTR.
    - b. USG Corporation; SHEETROCK Acoustical Sealant.

## 2.6 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings Rods: ASTM C 1330, Type C, Closed Cell, provide backing rods of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

## 2.7 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 joint-sealant performance.

### 3.2 PREPARATION

- A. **Surface Cleaning of Joints:** Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
  3. Remove laitance and form-release agents from concrete.
  4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. **Joint Priming:** Prime joint substrates where recommended by joint-sealant manufacturer. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. **Masking Tape:** Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. **General:** Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. **Sealant Installation Standard:** Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. **Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.**
1. Do not leave gaps between ends of sealant backings.
  2. Do not stretch, twist, puncture, or tear sealant backings.
  3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. **Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.**
- E. **Install sealants using proven techniques that comply with the following and at the same time backings are installed:**
1. Place sealants so they directly contact and fully wet joint substrates.
  2. Completely fill recesses in each joint configuration.
  3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.



- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
  2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
    - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.
- G. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations.
- 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.
  - B. Clean under provisions of Section 01 70 00.
- 3.5 PROTECTION
- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.
- 3.6 JOINT-SEALANT SCHEDULE
- A. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.
    1. Joint Locations:
      - a. Control and expansion joints on exposed interior surfaces of exterior walls.
      - b. Perimeter joints of exterior openings where indicated.
      - c. Tile control and expansion joints.
      - d. Vertical joints on exposed surfaces of interior unit masonry, concrete walls and partitions.
      - e. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
      - f. Openings around all penetrations through partitions and perimeter of partitions designated as smoke partitions.
      - g. Other joints as indicated.
    2. Urethane Joint Sealant: Single component, nonsag, Class 35
    3. Joint-Sealant Color: As selected by Architect from manufacturer's full standard range.

- B. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Sealant Location:
    - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
    - b. Tile control and expansion joints where indicated.
    - c. Other joints as indicated.
  2. Joint Sealant: Mildew resistant, single component, nonsag, mildew resistant, acid curing.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full standard range.
- C. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
    - a. Construction joints in cast-in-place concrete.
    - b. Control and expansion joints in unit masonry.
    - c. Joints in dimension stone cladding.
    - d. Joints in exterior insulation and finish systems.
    - e. Joints between metal panels.
    - f. Joints between different materials listed above.
    - g. Perimeter joints between materials listed above and frames of doors, windows and louvers.
    - h. Control and expansion joints.
    - i. Other joints as indicated.
  2. Silicone Joint Sealant: Single component, Type S, Grade NS, Class 50.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full standard range.
- D. Joint-Sealant Application: Interior acoustical joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Location:
    - a. Acoustical joints where indicated.
    - b. Other joints as indicated.
  2. Joint Sealant: Acoustical
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full standard range.

END OF SECTION

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SECTION 08 12 13

STEEL DOOR FRAMES

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 WORK INCLUDED

- A. Steel door frames.

1.03 RELATED WORK

- A. Section 08 13 13 - Steel Doors  
B. Section 08 71 00 - Door Hardware  
C. Section 09 91 00 - Painting: Field painting of frames.

1.04 REFERENCES

- A. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.  
B. ANSI/SDI-100 - Standard Steel Doors and Frames  
C. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of the DHI, SDI-100, and ANSI/SDI-A250.11.

1.06 REGULATORY REQUIREMENTS

- A. Conform to State Building Code and State Fire Code.

1.07 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01 33 00.  
B. Indicate frame configuration, anchor types and spacings, location of cutouts for hardware, reinforcement, and finish.  
C. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

1.08 DELIVERY, STORAGE AND PROTECTION

- A. Protect products under provisions of Section 01 60 00.
- B. Protect frames with resilient packaging sealed with heat shrunk plastic.
- C. Break seal on-site to permit ventilation.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS

- A. Subject to compliance with requirements of this Specification Section, provide products listed herein from one of the following:
  - 1. Ceco Door
  - 2. De La Fontaine
  - 3. Steelcraft
- B. Basis of Design: Steelcraft
- C. Substitutions: Under provisions of Section 01 60 00.

2.02 METAL FRAMES

- A. TYPES
  - 1. Exterior frames: Steelcraft Model F14-4 (14 gage galvanized steel with 2" face for 1-3/4" doors)
  - 2. Interior frames: Steelcraft Model F16-4 (16 gage cold rolled steel with 2" face for 1-3/4" doors.)
- B. FABRICATION
  - 1. All frames shall be furnished as a welded unit with mitered corners. Miter and entire connection is to be continuous fully welded. Welds are ground and finished smooth.
  - 2. Fabricate frames with hardware reinforcement plates welded in place as required to coordinate with hardware schedule. Provide mortar guard boxes, 22 gage.
  - 3. Prepare frame for silencers. Provide three single rubber silencers for single doors on strike side, and two single silencers on frame head at double doors without mullions.
  - 4. Interior frames shall be furnished with a minimum of six wall anchors and two base anchors of manufacturer's standard design. Jamb anchors shall be as required to coordinate with the adjacent wall construction.
  - 5. Provide a temporary spreader bar securely fastened to the bottom of each frame.
  - 6. Galvanized steel frame material is to contain a minimum of 5 % Pre-Consumer recycled content and 20% Post-Consumer recycled content.
  - 7. Anchors
    - a. Quantity: Minimum 3 anchors per jamb.
    - b. Jambs over 8'-0" in height: 1 additional anchor for each 2'-0" or fraction thereof.

- c. Construction: 18-gage steel strap or 3/16" diameter wire, adjustable or "T" shaped.
- d. Floor anchors: Welded inside each jamb. Up to 2 inch adjustable permitted subject to compliance with standards.

#### 2.04 FINISH

- A. After fabrication, all tool marks and surface imperfections shall be dressed, filled and sanded as required to make all faces and vertical edges smooth, level and free of all irregularities.
- B. Frames shall be thoroughly cleaned and phosphatized.
- C. All surfaces exposed to view shall receive a factory applied single coat of rust inhibiting prime paint baked-on in accordance with ANSI A224,1.
- D. The finish coats of paint shall be field applied by others in accordance with the painting section of these specifications.
- E. Where wall anchors utilizing exposed screw heads are used to install door frames, the exposed screws are to be covered with epoxy resin filler (Bondo or equal) and sanded smooth to match flush with the surrounding face.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION OF FRAMES

- A. Install frames in accordance with ANSI/SDI A250.11.
- B. Install the frames plumb, rigid, and in true alignment and fasten them so as to retain their position.

#### 3.02 CLEANING

- A. Clean in accordance with Section 01 70 00.

END OF SECTION

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SECTION 08 13 13

STEEL DOORS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Steel doors.

1.02 RELATED WORK

- A. Section 08 12 13 - Steel Door Frames  
B. Section 08 71 00 – Door Hardware  
C. Section 08 71 50 – Weatherstripping  
D. Section 09 91 00 - Painting; Field painting of doors and frames.

1.03 REFERENCES

- A. DHI - Door Hardware Institute: The Installation of commercial steel doors and steel frames, insulated steel doors in wood frames and builder's hardware.  
B. ANSI/SDI-100 - Standard Steel Doors and Frames

1.04 QUALITY ASSURANCE

- A. Conform to requirements of SDI-100.

1.05 REGULATORY REQUIREMENTS

- A. Conform to State Building Code and State Fire Code.

1.06 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01 31 00.  
B. Indicate door elevations, internal reinforcement, closure method, and cut outs for glazing.  
C. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

1.07 DELIVERY, STORAGE AND PROTECTION

- A. Protect products under provisions of Section 01 60 00.  
B. Protect doors with resilient packaging sealed with heat shrunk plastic.  
C. Break seal on-site to permit ventilation.



**PART 2 - PRODUCTS**

2.01 MANUFACTURERS

- A. Steelcraft
- B. Other acceptable manufacturers offering equivalent products.
  - 1. Ceco Door
  - 2. De La Fontaine
- C. Substitutions: Under provisions of Section 01 60 00.

2.02 HOLLOW METAL DOORS

A. TYPES

- 1. Exterior doors: SDI Grade III, extra heavy duty, Model 2 (seamless and 16 gage) (Steelcraft LW door series)

B. MATERIALS

- 1. Exterior doors:
  - a. Faces: 16 gage, A60 galvanized steel in accordance with ASTM A525. (A60 coating is .6 oz. of zinc per square foot of steel total coverage)
  - b. Channels to be 16 gage and perimeter welded to panels.
  - c. Core shall be foamed-in-place polyurethane insulation, "R" factor 11.1, compression strength 3600 PSI.
  - d. Top cap required.

C. FABRICATION

- 1. All doors shall be custom made, of the types and sizes shown on approved shop drawings, and shall be fully welded seamless construction with no visible seams or joints on their faces or vertical edges. Inverted end channel on bottom welded to both face sheets. Door thickness shall be 1-3/4" unless noted otherwise.
- 2. All doors shall be strong, rigid and neat in appearance, free from warpage or buckle. Corner bends shall be true and straight and of minimum radius for the gage of metal used.
- 3. Door faces shall be joined at their vertical edges by a continuous weld extending the full height of the door seam. All such welds shall be ground and smoothed to make them invisible and provide a smooth flush surface.
- 4. The vertical edge profiles on single acting swing doors shall be beveled 1/8" in 2".
- 5. All hardware furnished by the hardware contractor for single-acting doors shall be designed for beveled edges as specified above.

6. Hardware reinforcements:
  - a. Doors shall be mortised, reinforced, drilled and tapped at the factory for fully templated hardware in accordance with the approved hardware schedule and templates provided by the hardware contractor. Where surface-mounted hardware (or hardware, the interrelation of which is to be adjusted upon installation-such as top and bottom pivots, floor closers, etc.) is to be applied, doors shall have reinforcing plates only: all drilling and tapping shall be done by the installer.
  - b. Minimum gages for hardware reinforcing plates shall be as follows:
    1. Hinge and pivot reinforcements 7 gage.
    2. Concealed or surface mounted closers - 14 gage.
    3. Lock face, flush bolts and all other surface mounted hardware - 16 gage.
7. Galvanized steel door material is to contain a minimum of 5 % Pre-Consumer recycled content and 20% Post-Consumer recycled content.

#### 2.04 FINISH

- A. After fabrication, all tool marks and surface imperfections shall be dressed, filled and sanded as required to make all faces and vertical edges smooth, level and free of all irregularities.
- B. Doors shall be thoroughly cleaned and phosphatized.
- C. All surfaces exposed to view shall receive a factory applied single coat of rust inhibiting prime paint baked-on in accordance with ANSI A224,1.
- D. The finish coats of paint shall be field applied by others in accordance with the painting section of these specifications.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION OF DOORS

- A. Install doors in accordance with DHI.
- B. Install doors plumb and in true alignment in a prepared opening and fasten them to achieve the maximum operational effectiveness and appearance.

#### 3.02 TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.
- B. Clearances:  
Provide 1/8 inch at heads, jambs, and between pairs of doors.  
Provide 3/4 inch maximum from bottom of door to top of decorative floor finish or covering unless otherwise indicated.

3.03 ADJUSTING AND CLEANING

- A. Adjust hardware for smooth and balanced door movement.
- B. Clean in accordance with Section 01 70 00.

END OF SECTION

SECTION 08 14 16

CUSTOM WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract and Division 1 Requirements, apply to the work in this Section.

1.2 SECTION INCLUDES

- A. Custom stile and rail exterior and interior wood doors

1.3 RELATED SECTIONS

- A. Section 08 71 00 – Door Hardware

1.4 REFERENCES

- A. AWI - Architectural Woodwork Institute Quality Standards.  
B. ANSI/W.D.M.A Quality Standards I.S. 1A-04

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.  
B. Shop Drawings: Illustrate door location, door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, identify cutouts for glazing.  
C. Product Data: Indicate door core materials and construction; veneer species, type and characteristics; factory machining criteria, factory finishing criteria.  
D. Samples: Submit two 12"X12" corner samples of door construction. (As required by architect)  
E. Manufacturer's Instructions: Submit instructions regarding care of door during shipping, unloading, storage, preparation for hanging and hanging.

1.6 REGULATORY REQUIREMENTS

- A. All door assemblies shall meet the requirements of the State Building and State Fire Codes.

1.7 QUALITY ASSURANCE

- A. Product Performance: Provide documents showing compliance to the following WDMA attributes, validating the specified WDMA Performance Duty Level:
1. Adhesive Bonding Durability: WDMA TM-6
  2. Cycle Slam: WDMA TM-7
  3. Hinge Loading: WDMA TM-8
  4. Screw Holding: WDMA TM-10

1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to job site under provisions of Section 01 60 00 and manufacturer's instructions.
- B. Accept doors at job site in manufacturer's standard packaging. Inspect for damage.
- C. Do not store in damp or wet areas. Cover stored doors with opaque covering material where sunlight might bleach veneer. Seal top and bottom edges if stored more than one week.
- D. Break seal at job site to permit ventilation.
- E. Mark each door on top rail with opening number used on Shop Drawings. Include manufacturer's order number and date of manufacture.
- F. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weather tight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during remainder of construction period.

1.9 FIELD MEASUREMENTS

- A. Verify all dimensions at the site prior to fabrication. Any inconsistencies shall be communicated to the architect for clarification.

1.10 COORDINATION

- A. Coordinate the work with door opening construction, door frame, hardware and weatherstripping installation.

1.11 WARRANTY

- A. Provide manufacturer's warranty including replacement, refinishing, and re-hanging, under provisions of Section 01 78 00 for five year extended warranty for exterior doors.
- B. Include coverage for warping beyond specified installation tolerances, defective materials, telegraphing core construction.
- C. Include removal and re-hanging of doors found to be defective.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURER

- A. Custom exterior and interior panel wood doors subject to compliance with requirements of this Specification Section.
1. Captiva Doors by North Atlantic Corporation, 1255 Grand Army Highway, Somerset, MA
  2. Substitutions: Under provisions of Section 01 60 00.
- B. Supply all wood doors from same manufacturer.

### 2.2 DOOR CONSTRUCTION

- A. Doors
1. Stiles shall be constructed of Stave Lumber Core material laminated with a minimum 1/8" "A" grade veneer.
  2. Rails shall be solid lumber construction.
  3. Cope and stick joinery of stiles and rails using 1/2" x 4" dowels. Joints to have a minimum of 1 dowel
  4. Muntin bars shall have 1/4" x 2-1/2" dowels at every joint.
  5. Pressure fit joints using type 1 waterproof glue and silicone caulk to prevent moisture penetration.
  6. Raised panels shall be constructed of an exterior grade core with a minimum overall thickness of 1-5/8".
  7. Panel raise shall be constructed of solid lumber with matching face veneer and rim banded with mitered corners.
  8. Panel to be a Bevel Panel.
  9. Sticking to be 1/2" Ovolo.
  10. Species to be mahogany.
  11. Thickness: Varying thicknesses, See drawings for thicknesses. Verify thickness at the site to coordinate with existing frames.

### 2.3 ACCESSORIES

- A. Glass:
1. See Section 08 81 00.

### 2.4 FABRICATION

- A. Fabricate to AWI Section 1400 Premium Quality Standards.
- B. Hardware cutouts are to be pre-machined by the manufacturer. Hinge screw pilot holes shall be prepped by door manufacturer at factory.
- C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Reseal or refinish any machining alterations required at jobsite prior to installation
- D. Factory fit doors for frame opening dimensions identified on shop drawings.

## 2.5 FINISH

- A. Doors to be field finished. See specification section 09 91 00 – Painting.

## **PART 3 - EXECUTION**

### 3.1 EXAMINATION

- A. Verify that opening sizes and tolerances are acceptable.
- B. Do not install doors in frame openings that are not plumb or are out of tolerance for size or alignment.

### 3.2 INSTALLATION

- A. Installation Instructions: Install doors to comply with manufacturer's written instructions, referenced quality standard, and as indicated. Install work in accordance with AWI Quality Standards Section 1700.
- B. Trim non-rated door width by cutting equally on both jamb edges.
- C. Any cut doors are to have the cut surfaces finished (sealed) to match the remainder of the door.
- D. Coordinate installation of doors with installation of frames and hardware specified.
- E. Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
  - 1. Clearances:  
Provide 1/8 inch at heads, jambs, and between pairs of doors.  
Provide 3/4 inch maximum from bottom of door to top of decorative floor finish or covering unless otherwise indicated.
  - 2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.

### 3.3 INSTALLATION TOLERANCES

- A. Maximum Diagonal Distortion (Warp): 1/4 inch measured with straight edge or taut string, corner to corner, over a maximum 42 x 84 inch surface area.
- B. Maximum Vertical Distortion (Bow): 1/4 inch measured with straight edge or taut string, top to bottom, over a maximum 42 x 84 inch surface area.
- C. Maximum Width Distortion (Cup): 1/4 inch measured with straight edge or taut string, edge to edge, over a maximum 42 x 84 inch surface area.

### 3.4 ADJUSTING

- A. Adjust door for smooth and balanced door movement. Adjust work under provisions of AWI Quality Standards Section 1700.

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Providence, Rhode Island

Renovations  
Job No. 21041

- B. Operation: Correct any deficiency that prohibits the door from swinging or operating freely. Do not remove hinge screws after initial insertion. Shims used for alignment purposes must be inserted between hinge and frame. Do not insert shims between hinge and door.
- C. To prevent stile failure, insure that door closers are properly adjusted and do not limit the door opening swing. Limit door opening swing only with a properly located stop.
- D. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION



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SECTION 08 31 13

ACCESS DOORS

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 WORK INCLUDED

- A. Fire resistive rated and non-rated access doors and frames.

1.03 RELATED WORK

- A. Section 09 91 00 - Painting: Field paint finish.

1.04 QUALITY ASSURANCE

- A. Manufacture fire rated access doors and frames to conform to UL requirements and state and local codes.
- B. Provide labels indicating rating.

1.05 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Include sizes, types, finishes, scheduled locations, and details of adjoining work.
- C. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements of this Specification Section, provide products listed herein from one of the following:
1. Larsen
  2. Milcor
  3. Nystrom
- B. Basis of Design: Milcor
- C. Substitutions: Under provisions of Section 01 60 00.

## 2.02 ACCESS DOORS

- A. In board or plaster fire rated ceiling: Model UFR, Model 3218027  
Fire rated model 22"x36", UL label fire rating of 90 minutes, gray prime painted steel.

Wherever **wall** access panels are required per the Drawings or Project Manual, provide the following:

- Non-fire rated partitions: Milcor Model 3202XXX (or equal), minimum size 12"x12", gray prime painted steel. Provide masonry anchors as required for masonry walls. Screwdriver cam latch. Finish paint in the field.
- Fire rated partitions: Milcor Model 32180XX (or equal), fire rated model minimum size 12"x12", UL label fire rating of 90 minutes, gray prime painted steel. Provide masonry anchors as required for masonry walls. Screwdriver cam latch. Finish paint in the field.

## 2.03 FABRICATION

- A. Fabricate frames of 16 gage steel and door panels of 14 gage steel.  
B. Hardware:
  1. Concealed spring hinges.
  2. Flush, screwdriver operated with steel cam lock.

## 2.04 FINISH

- A. Prime coat units with baked on primer.  
A. Provide factory painted, electro-statically applied white primer finish.  
B. Paint in field to match surrounding surface.

## **PART 3 - EXECUTION**

### 3.01 INSPECTION

- A. Verify rough openings for door and frame are correctly sized and located.  
B. Beginning of installation means acceptance of existing conditions.

### 3.02 INSTALLATION

- A. Install frame plumb and level in opening.  
B. Position to provide convenient access to concealed work requiring access.  
C. Secure rigidly in place in accordance with manufacturer's instructions.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
1. Swinging doors.
  2. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
1. Mechanical door hardware.
- C. Related Sections:
1. Section 08 12 13 - Steel Door Frames
  2. Section 08 13 13 - Steel Doors
  3. Section 08 14 19 - Custom Wood Doors
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
  2. ICC/IBC - International Building Code.
  3. NFPA 101 - Life Safety Code.
  4. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards:
1. ANSI/BHMA Certified Product Standards - A156 Series

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes. Submit under provisions of Section 01 33 00.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware

Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. **Format:** Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. **Organization:** Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. **Content:** Include the following information:
  - a. Type, style, function, size, label, hand, and finish of each door hardware item.
  - b. Manufacturer of each item.
  - c. Fastenings and other pertinent information.
  - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
  - e. Explanation of abbreviations, symbols, and codes contained in schedule.
  - f. Mounting locations for door hardware.
  - g. Door and frame sizes and materials.
4. **Submittal Sequence:** Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. **Operating and Maintenance Manuals:** Provide manufacturer's operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.

D. **Warranties and Maintenance:** Special warranties specified in this Section.

#### 1.4 QUALITY ASSURANCE

- A. **Manufacturers Qualifications:** Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. **Installer Qualifications:** Installers, trained by the primary product manufacturers, with a minimum 3 years documented experience installing both standard and electrified builders hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. **Door Hardware Supplier Qualifications:** Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor in good standing by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural

Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

1. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- D. Source Limitations: Obtain each type and variety of Door Hardware specified in this Section from a single source, qualified supplier unless otherwise indicated.
- E. Regulatory Requirements: Comply with NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the model building code including, but not limited to, the following:
1. Where indicated to comply with accessibility requirements, comply with the State Building Code and the Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1 as follows:
    - a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
    - b. Door Closers: Comply with the following maximum opening-force requirements indicated:
      - 1) Interior Hinged Doors: 5 lbf applied perpendicular to door.
      - 2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
    - c. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1:2.
  2. NFPA 101: Comply with the following for means of egress doors:
    - a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
    - b. Thresholds: Not more than 1/2 inch high.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
1. Function of building, purpose of each area and degree of security required.
  2. Plans for existing and future key system expansion.
  3. Requirements for key control storage and software.
  4. Installation of permanent keys, cylinder cores and software.
  5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
1. Prior to installation of door hardware, arrange for manufacturers' representatives to hold a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door

hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.

2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
- B. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- C. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- D. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

#### 1.6 COORDINATION

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

#### 1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturers, agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner, this includes all labor required to repair or replace product. Failures include, but are not limited to, the following:
  1. Structural failures including excessive deflection, cracking, or breakage.
  2. Faulty operation of the hardware.

3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:

1. Ten years for extra heavy duty cylindrical (bored) locks and latches.
2. Seven years for heavy duty cylindrical (bored) locks and latches.
3. Five years for exit hardware.
4. Ten years for manual door closers.

## 1.8 MAINTENANCE

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

## PART 2 - PRODUCTS

### 2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

1. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3.

- a. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements.  
 The hardware schedule is based on the following manufacturers:
  1. Locks, passage & privacy sets-Sargent
  2. Exit devices - Sargent

B. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in AIA Document A701 – Instructions To Bidders and Division 01, Section 01 60 00, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

### 2.2 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges, full mortise unless otherwise indicated.

1. Quantity: Provide the following hinge quantity, unless otherwise indicated:
  - a. Two Hinges: For doors with heights up to 60 inches.
  - b. Three Hinges: For doors with heights 61 to 90 inches.



- c. Four Hinges: For doors with heights 91 to 120 inches.
  - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
- a. Widths up to 3'-0": provide 5" x 4-1/2" standard hinges.
3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
- a. Exterior Doors: Heavy weight, 5 knuckle, stainless steel with ball bearings and stainless steel non-removable pins
4. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:
- a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the following applications:
    - 1) Exterior doors
5. Acceptable Manufacturers:
- a. Bommer Industries (BO).
  - b. Hager Companies (HA).
  - c. Ives (IV).
  - d. McKinney Products (MK).
  - e. Stanley Hardware (ST).

### 2.3 DOOR OPERATING TRIM`

- A. Kickplates shall be 10" high x 2" less than nominal door width, .050" thick bronze with 4 beveled edges.. Install on push side of door. All fasteners used for attachment are to be of anti-theft design.
1. Acceptable Manufacturers:
- a. Burns Manufacturing (BU).
  - b. Hiawatha, Inc. (HI).
  - c. Ives (IV).
  - d. Rockwood Manufacturing (RO).
  - e. Trimco (TC).
  - f. Hager Companies (HA).

### 2.4 CYLINDERS AND KEYING

- A. Locks shall be grandmaster keyed as directed by the Owner and Architect.
- B. Supply two keys for each lock and 5 master keys for each master key grouping.

- C. Provide all keys of nickel silver metal only.
- D. Hardware consultant shall meet with owner/architect to determine specific keying requirements and functions of locks.
- E. Cylinders to be high security interchangeable core 6-pin.
- F. Coordinate new cylinders with existing Medeco keying system.

## 2.5 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
  - 1. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
  - 2. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty trim with cold forged escutcheons, beveled edges, and four threaded studs for thru-bolts.
    - a. Lock Trim Design: As indicated in Hardware Sets, provide design to match that of the specified locksets. Provided free-wheeling type trim.
    - b. Where function of exit device requires a cylinder, provide an interchangeable core type keyed cylinder (Rim or Mortise) as specified.
  - 3. Rail Sizing: Provide exit device rails factory sized for proper door width application.
  - 4. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets **and be tested by an independent third party testing agency to meet a minimum of 10 million cycle tests.** Mounting rails to be formed from smooth stainless steel, brass or bronze architectural materials no less than 0.072" thick, with push rails a minimum of 0.062" thickness. Painted or aluminum metal rails are not acceptable. Exit device latch to be investment cast stainless steel, pullman type, with deadlock feature.
  - 1. Basis of Design: Sargent Manufacturing (SA) - 80 Series.
  - 2. Acceptable Manufacturers:
    - a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
    - b. Sargent Manufacturing (SA) - 80 Series.
    - c. Von Duprin (VD) - 35A/98/99 XP Series.
    - d. Precision Apex 2000 Series.

## 2.6 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
  2. Standards: Closers to comply with UL-10C and UBC 7-2 for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
  3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
  4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
    - a. Where closers are indicated to have mechanical dead-stop, provide heavy duty arms and brackets with an integral positive stop.
    - b. Where closers are indicated to have mechanical hold open, provide heavy duty units with an additional built-in mechanical holder assembly designed to hold open against normal wind and traffic conditions. Holder to be manually selectable to on-off position.
    - c. Where closers are indicated to have a cushion-type stop, provide heavy duty arms and brackets with spring stop mechanism to cushion door when opened to maximum degree.
    - d. Closers shall not be installed on exterior or corridor side of doors; where possible, install the closers on door for optimum aesthetics. Provide drop plates or other accessories as required for proper mounting.
  5. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for a complete installation.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers **and be tested by an independent third party testing agency to meet a minimum of 5 million cycle tests**, with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units and high impact, non-corrosive plastic covers standard.
1. Acceptable Manufacturers:
    - a. Corbin Russwin Hardware (RU) -- DC8000 Series.
    - b. LCN Closers (LC) - 4040XP Series.
    - c. Sargent Manufacturing (SA) - 351 Series.
    - d. Norton Door Controls (NO) - 7500 Series.

## 2.7 POWER SUPPLY

- A. Power supply for electronic access control and security components.

- B. Provide and install all electrical connections, wiring, junction boxes, etc. as required between building electrical and power supply unit to make fully operational. Provide all components necessary to connect to access control system readers.
- C. Basis of design is Boxed Power Supply by Securitron/Assa Abloy, model BPS-24-1

## 2.8 DOOR WIRING HARNESS AND HINGE

- A. Cabling/harnesses to be as follows:
  - 1. Door Wiring Harness - Cable between hinge and through the door to the lockset or exit device:  
ElectroLynx QC-C206
  - 2. Frame Wiring Harness - Cable from the hinge location, up the jamb to above ceiling:  
ElectroLynx QC-C1500P
- B. Electric hinge to be McKinney ElectroLynx Hinge model TA2314 QC4 or equal.

## 2.9 FABRICATION

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

## 2.10 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- D. Hardware in General: US10B Antique Bronze, oiled
- E. Exit Devices, flat goods - US10B Antique Bronze, oiled
- F. Closers - Dark Bronze

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

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

#### 3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

#### 3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
  - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
  - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
  - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
  - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

- F. NOTE: Coordinate installation of new door hardware with existing frames scheduled to remain. All new locksets are to be aligned as required to match-up with the existing strikes. Hinge locations are to be coordinated to match-up with the existing frame mortises. Verify all conditions at site prior to fabrication.
- G. NOTE: Where new door hardware is to be installed on an existing door and/or frame, the Contractor is required to inspect the door and frame and adjust all existing hardware as required to ensure proper operation and function.

### 3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

### 3.5 ADJUSTING

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

### 3.6 CLEANING AND PROTECTION

- A. Clean work under provisions of 01 70 00.
- B. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- C. Clean adjacent surfaces soiled by door hardware installation.
- D. Clean operating items as necessary to restore proper finish, and provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

### 3.7 DEMONSTRATION

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

### 3.8 DOOR HARDWARE SCHEDULE

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

### 3.9 COMPLETE HARDWARE INSTALLATION

- A. The following schedule listings cover typical openings. The Contractor shall be responsible for complete examination of the drawings and shall provide all hardware required. Any hardware necessary but not specifically mentioned herein shall be of the like quality, weight, design and finish as similar openings or items specified herein.

### 3.10 HARDWARE SCHEDULE:

#### HW-1 Exterior Pairs Egress Doors - with Outside Key & Lever

Butts

- 1 Exit Device 16-31-8706 x ETL Sargent
- 1 Exit Device 16-31-8710 EO (exit only – no outside trim) Sargent
- 2 Closers with Cush-n-stop
- 2 Kickplates

#### HW-2 Exterior Single Doors – Exit Only

Butts

- 1 Exit Device 8810 (exit only – no outside trim) Sargent
- 1 Closer with Cush-n-stop
- 1 Kickplate

#### HW-3 Exterior Single Egress Doors - with Outside Key & Lever

Butts

- 1 Exit Device 31-8804 Sargent
- Anti-Vandal Pull Sargent 824 (or equal)
- 1 Closer with Cush-n-stop.
- 1 Kickplate

#### HW-4 Exterior Pairs Egress Doors

Butts

- 1 Exit Device 16-31-8804 Sargent (cylinder on exterior)
- 1 Exit Device 16-31-8810 EO (exit only) Sargent
- 2 Exterior pulls Patton Appliance Pull, Model 436269, oil-rubbed bronze, available from Rejuvenation.
- 1 Removable center mullion 980 Sargent
- 2 Closers with Cush-n-stop
- 2 Kickplates

#### HW-5 Interior Single Doors with Office Lock

Butts

- 1 Lockset 10G05 Sargent
- 1 Stop
- 3 Silencers

HW-6 Exterior Pairs Egress Doors - with Outside Key & Lever

Butts

1 Electrified hinge

1 Electrified Exit Device 16-43 8774-24V x 306 x ETL Sargent  
 (electric latch retraction-coordinate with remote activation button in office  
 - Fail secure)

1 Exit Device 16-31-8710 EO (exit only - no outside trim) Sargent

2 Closers with Cush-n-stop

1 Door wiring harness

1 Frame wiring harness

1 Power supply

2 Kickplates

1 Remote button in Office to operate the electrified latch retraction system. (Verify exact location with Architect)

(NOTE: button operates exit device at door 112 only.)

Note: Door normally locked and closed. Entry by remote button or manual key. Free egress at all times.

(Note: General Contractor must ensure the low voltage wiring pertaining to the electrified exit device is installed in coordination with remainder of building wiring and connected to the remote activation button. Provide all electrical connections and wiring between building electrical and door equipment as required for a fully operational device.)

END OF SECTION



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SECTION 08 71 50

WEATHERSTRIPPING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The furnishing and installation of all door weatherstripping, sound and smoke proofing.

1.02 RELATED SECTIONS

- A. 08 12 13 - Steel Door Frames
- B. 08 13 13 - Steel doors

1.03 DESIGN REQUIREMENTS

- A. All work not shown or specified but required to complete the installation shall be provided.
- B. Provide and install weatherstripping on all new exterior doors.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Shop drawings: Indicate various styles with model numbers and manufacturer.
- C. Provide samples if asked for by Architect.

1.05 QUALIFICATIONS

- A. Installer: Products specified under this section shall be installed by competent tradesmen experienced in this work.

1.06 REGULATORY REQUIREMENTS

- A. Work shall satisfy requirements of government agencies having jurisdiction.
- B. All thresholds to comply with the state building code and ANSI A117.1.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.

1.08 FIELD MEASUREMENTS

- A. Field verify all dimensions prior to installation.

1.09 WARRANTY

- A. Provide one year warranty under provisions of Section 01 78 00.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS

- A. Pemko
- B. Other acceptable manufacturers offering equivalent products.
1. Accurate Metal Weatherstrip Co., Inc.
  2. Zero International, Inc.
- C. Substitutions: Under provisions of Section 01 60 00.

2.02 MATERIALS

- A. Exterior outswinging doors.
1. Head and jambs: 316DPK
  2. Sweep: 315DN
  3. Threshold: 252X3AFG (thermal break)
  4. Astragal: 18041DP

**PART 3 - EXECUTION**

3.01 INSTALLATION

- A. Weatherstripping shall be applied in accordance with manufacturers specifications. Thresholds shall be set in elastic cement and held in place with rawl plugs and aluminum screws.

3.02 DISSIMILAR MATERIALS

- A. Where aluminum surfaces come in contact with metals other than stainless steel, zinc, white bronze or other metals compatible with aluminum, aluminum surfaces shall be kept from direct contact with such parts by (a) painting the dissimilar metal with a coating of heavy bodied bituminous paint, (b) a good quality caulking placed between aluminum and dissimilar metal, or (c) a non-absorptive tape or gasket.

3.03 ADJUSTMENTS

- A. Adjust weatherstripping as required to provide proper weatherproofing.
- B. Gaskets and/or caulking shall be provided as required for a proper installation.

3.04 CLEANING

- A. Clean work under provisions of Section 01 70 00.

END OF SECTION

SECTION 08 81 00

GLASS AND GLAZING

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 SCOPE: Provide all glass and glazing work complete in accordance with the Specifications and Drawings.

1.03 RELATED SECTIONS

- A. Section 08 14 19 – Custom Wood Doors

1.04 REFERENCES

- A. ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
- B. ASTM E84 - Surface Burning Characteristics of Building Materials.
- C. FS DD-G-451 - Glass, Float or Plate, Sheet, Figured (Flat, for Glazing, Mirrors and Other Uses).
- D. FS DD-G-1403 - Glass, Plate (Float), Sheet, Figured, and Spandrel (Heat Strengthened and Fully Tempered).
- E. SIGMA No. 64-7-2 - Specification for Sealed Insulating Glass Units.
- F. FGMA - Glazing Manual.

1.05 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- C. Provide data on glazing sealant. Identify colors available.
- D. Submit samples under provisions of Section 01 33 00.
- E. Submit samples of each type glass and each type glazing material.
- F. Submit sealed glass unit manufacturer's certificate under provisions of Section 01 33 00 indicating units meet or exceed specified requirements.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to site under provisions of Section 01 60 00.
- B. Store and protect products under provisions of Section 01 60 00.

1.07 WARRANTY

- A. Provide ten year warranty under provisions of Section 01 78 00.
- B. Warranty: Include coverage of sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS

- A. Subject to compliance with requirements of this Specification Section, provide products listed herein from one of the following (unless noted from a different manufacturer below):
  - 1. Viracon
  - 2. Vitro Architectural Glass
  - 3. Guardian
- B. Substitutions under provisions of Section 01 60 00.

2.02 GLASS MATERIALS

- A. Exterior insulated glass
  - 1. 1" insulated - 1" thick (1/4" glass, 1/2" airspace, 1/4" glass), hermetically sealed, low "E", clear.  
 Glass to be tempered as required. CBA rated and certified.
    - a. Glass is to meet the following National Fenestration Rating Council (NFRC) testing in accordance with the RI State Building Code SBC-8 State Energy Conservation Code:
      - 1. NFRC 100; Procedure for Determining Fenestration Thermal Properties: The conductive thermal transmittance (U-Factor) shall not be more than:
        - a. 0.38 BTU/hr/sf/°F at fixed window systems.
        - b. 0.45 BTU/hr/sf/°F at operable window systems.
      - 2. NFRC 200; Solar Heat Gain Coefficient and Visible Transmittance: Solar Heat Gain Coefficient (SHGC): shall not be more than 0.40 at all fenestrations.
    - b. Where noted on the drawings as translucent glass, the interior sheet of glass is to be satin, acid etched to create a translucent finish. Submit for approval by the Architect.
- B. Polycarbonate Glazing shall be Lexan MR10 as manufactured by GE Plastics, Pittsfield, MA.
  - 1. Polycarbonate, 0.236" gauge, UV and abrasion resistant and clear.
  - 2. 5 Year warranty
  - 3. Install glazing in accordance with manufacturer's instructions.
  - 4. Clean glazing using manufacturer approved cleaning procedures only.

### 2.03 ACCESSORIES

- A. Glazing Compound, Tape and Sealant:
1. Compound - Tremco Glazing Compound or approved equal.
  2. Tape - Tremco Polyisobutylene #440 or approved equal.
  3. Sealant - Tremco Mono Sealant or approved equal.
- B. Setting Blocks and Spacers shall be provided of resilient types and materials as recommended by the manufacturer of the glass or glazing materials.

### 2.04 MANUFACTURER'S LABELS:

Manufacturer's labels showing strength, grade, thickness, type and quality will be required on each piece of glass. Labels must remain on glass until it has been set and inspected. Glazing materials shall be delivered to the site in unopened original containers bearing manufacturer's label specifying the quality, brand, trade name and directions for use. Thinners or additives shall not be used for glazing materials unless specifically recommended by the manufacturer. Safety glass must bear a permanent visible mark indicating such.

## **PART 3 - EXECUTION**

### 3.01 INSTALLATION:

- A. General: Surfaces of rabbets, glass edges and stops or beads shall be clean, dry, free from dust, oil, rust and loose paint. Metal surfaces shall be wiped clean with solvent recommended by the manufacturer. Glazing materials shall not be applied in temperature below 40 degrees F. or during damp or rainy weather. Glass shall be set without springing or forcing. Glazing compound shall be applied in accordance with the recommendations of the manufacturer. Centered position and compound thickness shall be maintained. Setting blocks at the sills and centering shims inside and out on all four sides of glass shall be provided.
- B. All glass shall be installed in accordance to the recommendations of the Flat Glass Jobber's Association Glazing Manual and the glass manufacturer.
- C. Wood Doors: Glass shall be held in place with wood glazing stops. Glazing shall be done after doors have been installed and surfaces primed and are thoroughly dry. Glass shall be of proper size to obtain the required edge clearances. Glass shall rest on setting blocks and the entire perimeter of the glass shall be bedded in glazing compound. Edge and face clearances shall be maintained uniform. Glazing compound shall fill rabbet solidly with the stop bead in place. Stop bead shall be fastened with screws. Surplus glazing compound shall be removed from both sides of glass at an angle.
- D. Wood Framed Windows: Glass shall be held in place with wood glazing stops. Glass shall be of proper size to obtain the required edge clearances. Glass shall rest on setting blocks and the entire perimeter of the glass shall be bedded in glazing compound. Edge and face clearances shall be maintained uniform. Glazing compound shall fill rabbet solidly with the stop bead in place. Stop bead shall be fastened with screws. Surplus glazing compound shall be removed from both sides of glass at an angle.

- 3.02 CLEANING: Glass shall be cleaned on both sides of surplus glazing material. Glazing materials shall not be disturbed with scrapers. Acid solutions or water containing caustic soaps shall not be used. Broken and cracked glass and glass not complying with the specifications shall be replaced.

END OF SECTION

SECTION 09 01 20

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SECTION INCLUDED

- A. Requirements and limitations for cutting and patching of work.

1.02 RELATED SECTIONS

- A. Individual Product Specification Sections:
1. Cutting and patching incidental to work of the Section.
  2. Advance notification to other Sections of openings required in work of those Sections.
  3. Limitations on cutting structural members.

1.03 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
1. Structural integrity of any element of Project.
  2. Integrity of weather-exposed or moisture-resistant element.
  3. Efficiency, maintenance, or safety of any operational element.
  4. Visual qualities of sight exposed elements.
- B. Include in request:
1. Identification of Project.
  2. Location and description of affected work.
  3. Necessity for cutting or alteration.
  4. Description of proposed work, and products to be used.
  5. Alternatives to cutting and patching.
  6. Effect on work of Owner or separate contractor.
  7. Written permission of affected separate contractor.
  8. Date and time work will be executed.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Primary Products: Those required for original installation.
- B. Product Substitution: For any proposed change in materials, submit request for substitution under provisions of Section 01 60 00.



### PART 3 - EXECUTION

#### 3.01 EXAMINATION

- A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. Beginning of cutting or patching means acceptance of existing conditions.
- C. Coordinate with other specification sections.

#### 3.02 PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- B. Provide protection from elements for areas which may be exposed by uncovering work.
- C. Maintain excavations free of water.

#### 3.03 CUTTING AND PATCHING

- A. Execute cutting, fitting, and patching as required to complete work.
- B. Fit products together, to integrate with other work.
- C. Remove and replace defective or non-conforming work.
- D. Provide openings in the work for penetration of mechanical, plumbing and electrical work.
- E. In all areas indicated by the construction documents to have equipment or utilities removed by other specification sections and new work is not scheduled to be installed, the General Contractor is responsible to patch all holes, touch up paint, modify the surface, etc. as required to match the existing in color and texture. If finish is unable to match, damage too extensive or holes too large, the contractor is responsible to replace the material as required with new material to match existing as approved by the Architect and Owner.

#### 3.04 PERFORMANCE

- A. Execute work by methods to avoid damage to other work, and which will provide appropriate surfaces to receive patching and finishing.
- B. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- C. Restore work with new products in accordance with requirements of Contract Documents.
- D. Fit work air tight to pipes, sleeves, ducts conduit, and other penetrations through surfaces.

- E. At penetrations of fire rated walls, partitions, ceiling or floor construction, completely seal voids with fire rated material to full thickness of the penetrated element to maintain existing rating.
- F. All patch work shall match existing in materials, texture and construction.
- G. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

### 3.05 SCHEDULE

- A. Removals as noted in the individual Sections (i.e. mechanical, plumbing, electrical) and on the drawings.
- B. Contractor to provide all saw cutting of concrete and masonry walls, and all core drilling.
- C. Contractor is responsible for all cutting, filling, patching and repairing of existing walls, floors and ceilings as required for the installation of all new mechanical, electrical, plumbing and fire protection work in the existing building.

### 3.06 CLEANING

- A. Clean work under provisions of Section 01 70 00.
- B. Remove all debris and trash from the site on a daily basis and dispose of in accordance with all local and state Codes.

END OF SECTION

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SECTION 09 01 60

WOOD FLOOR REFINISHING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Furnish all labor, materials and equipment required to complete the work described in this section.
- B. Clean, sand and refinish existing wood floors.
- C. Secure loose flooring.
- D. Patch and repair existing flooring
- E. Removal of existing floor coverings only where wood floors are to be refinished (as occurring).

1.02 REFERENCES

- A. National Oak Flooring Manufacturer's Association (NOFMA)

1.03 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.

1.04 QUALIFICATIONS

- A. The contractor shall specialize in performing the work of this section with three years minimum experience.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00. Store in dry area with adequate air circulation.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 70 degrees F. for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.
- B. Minimum application temperature for finish shall be 50 degrees F. unless required otherwise by the manufacturer's instructions.
- C. Do not proceed with refinishing of wood floors until spaces have been enclosed, other work which might damage or soil the floors is complete and the spaces are at approximate humidity condition planned for occupancy.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Stain shall be a penetrating non-fading wood stain of color required to match existing flooring and to be approved by the Architect.
- B. Wood filler shall be paste type, pigmented to match existing flooring and to be approved by the Architect.
- C. Polyurethane clear gloss finish; Rez 77-5 by Pittsburgh Paints. (or equal)
- D. Substitutions: Under provisions of Section 01 60 00.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Contractor must examine all wood flooring to be refinished and conditions under which work will be performed and must notify the Architect in writing of conditions detrimental to the proper completion and maintenance of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

### 3.02 PREPARATION

- A. Remove existing floor coverings in areas where wood floors are to be refinished.
- B. Renail existing loose flooring with screw type flooring nails that are surface nailed, set and filled.
- C. Replace all damaged wood flooring in areas to be refinished, as required to match existing. New wood flooring strips shall match the quality, color, pattern and texture of the existing flooring. Assume for bidding purposes **twenty five square feet** of wood flooring will be replaced under the Base Bid.

### 3.03 SANDING

- A. All refinish work is to be done after all other trades are finished. The wood floors shall be sanded with a heavy power driven sander. For the first cut, the floor shall be traversed in both directions going with the grain of the flooring using No. 2-1/2 sandpaper. Follow with No. 1-1/2 paper, then with No. 1/2, finishing with No. 00. All cuts should be made with the grain. Rough or finish sanding on the diagonal will not be permitted without specific permission from the Architect. Particular attention should be give on each finishing cut to completely remove the coarser grit marks from the preceding cut. Sanding machine shall not be moved more than two boards at a time for each traverse on any of the four cuts. After sanding, contractor shall thoroughly vacuum floor with heavy duty commercial type vacuum. Floor shall be thoroughly swept with a tack rag until no traces of powder remain. Request inspection by the Architect or his authorized representative before any finishing work starts.
- B. Do not permit traffic on floor after sanding and until finish is completed.

- C. Cover sanded floor to provide access for application of first finish coats.

#### 3.04 FINISHING

- A. Apply stain on flooring to match existing.
- B. Apply three coats of clear polyurethane finish in accordance with manufacturer's instructions.
- C. During finishing and drying time, floor must be free of dust and dirt. Avoid air currents that carry dust and dirt. Allow adequate ventilation for proper curing.

#### 3.05 CLEANING

- A. Clean work under provisions of Section 01 70 00.
- B. Dispose of all unused materials and containers properly and in accordance with appropriate codes.

#### 3.06 PROTECTION OF FINISHED WORK

- A. Protect finished work under provisions of Section 01 70 00.
- B. Protect finished floor with heavy covering during construction.
- C. After the final coat, do not use floor for at least 72 hours. Avoid heavy traffic for at least a week.

END OF SECTION

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**SECTION 09 21 16**

**STEEL FRAMED DRYWALL SYSTEMS**

**PART 1 - GENERAL**

1.1 SCOPE: Provide all necessary materials for construction of drywall systems.

1.2 RELATED SECTIONS:

- A. Division 06 Carpentry Section for wood framing, blocking and furring.
- B. Division 09 Painting Section for paint applied to gypsum board surfaces.
- C. Section 05 50 00 - Miscellaneous Metal Work

1.3 DELIVERY AND STORAGE OF MATERIALS:

- A. Deliver, store, and handle under provision of Section 01 60 00.
- B. All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall be removed from the premises. Stack gypsum panels flat to prevent sagging.

1.4 ENVIRONMENTAL CONDITIONS:

- A. In cold weather and during gypsum panel joint finishing, temperatures within the building shall be maintained within the range of 55 degrees to 70 degrees F. Adequate ventilation shall be provided to carry off excess moisture.
- A. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Submit product data on all materials and accessories.

**PART 2 - PRODUCTS MANUFACTURERS**

- A. Provide manufacturer and product specified under the Materials paragraph below.
- B. Substitutions: Under provisions of Section 01 60 00.



2.2 MATERIALS: See drawings for size and location of materials.

- A. Non-Structural Studs: Cold-formed galvanized steel C-studs as per ASTM C 645, ProSTUD products manufactured by ClarkDietrich Building Systems.
1. Unless noted otherwise on the drawings, provide the following: Minimum 25 gage for interior non-load bearing partitions, maximum 10'-0" high and 20 gage for above 10'. Provide 20 gage for interior load bearing partitions. Provide 20 gage for jamb and lintel components.
  2. Flange Size: 1 1/4 inch.
  3. Web Depth: As specified on Drawings.
- B. Non-Structural Track: Cold-formed galvanized steel runner tracks, drywall track, in conformance with ASTM C 645, ProTRAK as manufactured by ClarkDietrich Building Systems.
1. Flange Size: 1-1/4 inch
  2. Web Depth: Track web to match and coordinate with stud web size.
- C. Metal Furring (Hat) Channel manufactured by ClarkDietrich Building Systems: 7/8" depth by 10' or 12' length, (20 gage at ceilings) (25 gage at walls), meet or exceed ASTM C645.
- D. Z Furring Channel manufactured by ClarkDietrich Building Systems available in 1", 1-1/2", 2", 2 1/2" depths by 10' length with 1 1/4" wide flange, meet or exceed ASTM C645. See drawings for size and gage.
- E. 18-ga. Galvanized Tie Wire.
- F. Faceboards - 48" wide USG Sheetrock Brand Firecode Type X gypsum board  
Provide lengths as required.  
Thickness to be as indicated on drawings. If not indicated on drawings, board to be 5/8" thick.
- G. Fasteners - USG Screws: 3/8" Type S, pan head; 3/8", 1/2" Type S-12, pan head; 5/8" Type S-12 low-profile head; 1", 1-1/4", 1-5/8", 1-7/8", 2-1/4" Type S, bugle head; 1", 1-5/8", 2-1/4" Type S or S-12, trim head; 1-1/2" Type G, bugle head; 1-1/4" Type W, bugle head; 1'-1/4" annular ring drywall nail.
- H. USG Trim No. (200-A)(401)(402)(P-1)(801-A)(801-B).
- I. USG Corner Bead - (No. 103 DUR-A-BEAD) (No. 104 DUR-A-BEAD)(No.800) Metal Corner Reinforcement.
- J. USG Control Joint No. 093
- K. Joint Treatment (select a United States Gypsum Company Joint System)
- Standard Gypsum Finish = Joint Treatment: Sheetrock Brand All Purpose Joint Compound. Provide a Level 4 gypsum board finish. (Coat gypsum only at joints and fasteners)  
This finish is to be used typically everywhere except where otherwise noted on the drawings.
- L. USG Acoustical Sealant

- M. Adhesive  
 -(for double-layer applications and column fireproofing) Durabond joint Compound or USG Ready-Mixed Joint Compound (All Purpose) (Taping)  
 -(for adhesive application) Drywall Stud Adhesive.

### PART 3 - EXECUTION

#### 3.1 PARTITION INSTALLATION

- A. **STUD SYSTEM ERECTION:** Attach steel runners at floor and ceiling to structural elements with suitable fasteners located 2" from each end and spaced 24" o.c.  
 To suspended ceilings, use toggle bolts or hollow wall anchors spaced 16" o.c.

Position studs vertically, with open side facing in same direction, engaging floor and ceiling runners, and spaced 16" o.c. When necessary, splice studs with 8" nested lap and two positive attachments per stud flange. Place studs in direct contact with all door frame jambs, abutting partitions, partition corners and existing construction elements. Where studs are installed directly against exterior walls and a possibility of water penetration through walls exists, install asphalt felt strips between studs and wall surfaces.

Anchor all studs for shelf-walls and those adjacent to door and window frames, partition intersections, corners and freestanding furring to ceiling and floor runner flanges with USG Metal Lock Fastener tool or screws. Securely anchor studs to jamb and head anchors of door or borrowed light frames by bolt or screw attachment. Over metal door and borrowed light frames, place horizontally a cut to length section of runner, with a web flange bend at each end, and secure to strut-studs with two screws in each bent web. Position a cut-to-length stud (extending to ceiling runner) at vertical panel joints over door frame header. When attaching studs to steel grid system, structural adequacy of grid to support end reaction of wall must be determined.

All steel stud partitions are to extend from floor to underside of roof or floor deck above.

#### 3.2 APPLYING INTERIOR GYPSUM BOARD

- A. Single-Layer Application:
1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
  2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
    - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
    - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
  3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

B. Gypsum Panel Attachment

Screw spacing that follows is for non-rated construction. For fire-rated construction, obtain screw spacing from manufacturer's fire test report.

For single-layer panel application, space screws 16" o.c. in field and along abutting end joints.

### 3.3 WALL FURRING INSTALLATION

- A. **METAL FURRING (HAT) CHANNEL INSTALLATION:** Attach metal furring channels horizontally, spaced 24" o.c. to interior of masonry or concrete surface with hammer set or power driven fasteners or concrete stub nails staggered 24" o.c. on opposite flanges. Where furring channel is installed directly to exterior wall and a possibility of water penetration through walls exists, install asphalt felt protection strip between furring channel and wall.

Apply gypsum panels parallel to channel. Position all edges over furring channels in parallel application; all ends over framing in perpendicular application with joints staggered in successive courses. Use maximum practical lengths to minimize end joints. Fit ends and edges closely, but not forced together. Fasten panels to channels with 1" Type S Screws spaced 16" o.c.

- B. **Z FURRING CHANNEL INSTALLATION:** Erect insulation vertically and hold in place with Z-furring channels spaced 24" o.c. Except at exterior corners, attach narrow flanges of furring channels to wall with concrete stub nails or power driven fasteners spaced 24" o.c. At exterior corners, attach wide flange of furring channel to wall with short flange extending beyond corner. On adjacent wall surface, screw attach short flange of furring channel to web of attached channel. Start from this furring channel with a standard width insulation panel and continue to regular manner. At interior corners, space second channel no more than 12" from corner and cut insulation to fit. Hold mineral fiber insulation in place until gypsum panels are installed with 10" long staple field fabricated from 18 ga. tie wire and inserted through slot in channel. Apply wood blocking around window and door opening and as required for attachment of fixtures and furnishings.

Apply gypsum panels parallel to channels with vertical joints occurring over channels. Use no end joints in single-layer application. Attach gypsum panels with 1" Type S Screws spaced 16" oc. in field of panels and at edges, and with 1-1/4" Type S Screws spaced 12" o.c. at exterior corners. For double-layer application, apply base layer parallel to channels, face layer either perpendicular or parallel to channels with vertical joints offset at least one channel. Attach base layer with screws 24" o.c. and face layer with 1-5/8" screws 16" o.c.

### 3.4 ACCESSORY APPLICATION

- A. **JOINT SYSTEM:** Finish all face panel joints and internal angles with a United States Gypsum Company Joint System installed according to manufacturer's directions. Spot exposed fastened on face layers and finish corner bead, control joints and trim as required, with at least three coats of joint compound, feathered out onto panel faces and sanded smooth.
- B. **CORNER BEAD:** Reinforce all vertical and horizontal exterior corners with corner bead fastened with 9/16" galvanized staples 9" o.c. on both flanges along entire length of bead.
- C. **METAL TRIM:** Where assembly terminates against masonry or other dissimilar material, apply metal trim over panel edge and fasten with 9/16" galvanized staples 9" o.c.
- D. **SCREWS:** Power drive at least 3/8" from edges or ends of panel to provide uniform dimple 1/32" deep.
- E. **CONTROL JOINTS:** Break panel behind joint and back by double framing members (and 2" wide gypsum panel strip). Apply acoustical sealant to fill gap and attach control joint to face layer with 9/16" galvanized staples spaced 6" o.c. on both flanges along entire length of joint. Provide a full

height control joint where a wall or partition extends in a continuous straight plane for more than 30 linear feet or where indicated on the drawings.

3.5 ASSOCIATED METAL FRAMING

- A. Provide metal framing as required to support light fixtures, piping, HVAC equipment and ductwork below gypsum board ceilings or as required to span across/over/under suspended equipment. Coordinate with the associated MEP contract documents. See Section 05 50 00 - Miscellaneous Metal Work for additional information.

3.6 CLEANING

- A. Clean project under provisions of Section 01 70 00.

END OF SECTION

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SECTION 09 26 13

GYPSUM VENEER PLASTERING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Gypsum lath plaster base and two coat gypsum plaster used as a finish for partitions and ceilings.

1.02 RELATED SECTIONS

- A. Section 09 91 00 - Painting.

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM):
1. A 641, Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
  2. C37 Specification for gypsum lath
  3. C 841, Specification for Installation of Interior Lathing and Furring.
  4. C 842, Specification for Application of Interior Gypsum Plaster.
  5. C 587, Specification for Gypsum Veneer Plaster.
  6. C 954, Specification for Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases to Steel Studs from 0.33 in. to 0.112 in. in Thickness.
  7. C 1002, Specification for Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases.
  8. C 1396, Specification for Gypsum Board (Gypsum Base for Veneer Plaster).

1.04 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Manufacturer's specifications and installation instructions for each product specified.
- C. Shop Drawings: Show layout of control and expansion joints.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
- B. Packaging and Shipping: Have materials shipped in manufacturer's original packages showing manufacturer's name and product brand name.
- C. Storage and Protection: Store materials inside and protected from damage by the elements. Protect ends, edges, and faces of gypsum lath from damage. Protect metal framing and accessories from bending.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Comply with ASTM C 842.

1.07 GUARANTEE

- A. This Contractor shall guarantee the adhesion of the plaster on all surfaces for a period of 1 year after date of completion and acceptance of the building and shall make good any damage caused by the falling of plaster. He shall also guarantee this work for a period of one year against pitting, peeling or other defects.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS

- A. National Gypsum Company
- B. Other acceptable manufacturer offering equivalent products.
1. United States Gypsum Company
- C. Substitutions: Under provisions of Section 01 60 00.

2.02 MATERIALS

- A. Metal Framing:
1. Main Runner Channels: 2 in. cold rolled steel channel, weighing 590 lbs. per 1000 lin. ft. with min. base steel of 0.054 in., galvanized or painted.
  2. Main Runner Channels: 1-1/2 in. cold rolled steel channel, weighing 475 lbs. per 1000 lin. ft. with min. base steel of 0.054 in., galvanized or painted.
  3. Cross Furring Channels: 3/4 in. cold rolled steel channel, weighing 300 lbs. per 1000 lin. ft. with min. base steel of 0.054 in., galvanized or painted.
  4. Channel Studs: 3/4 in. cold rolled steel channel, weighing 300 lbs. per 1000 lin. ft. with min. base steel of 0.054 in., galvanized or painted.
  5. Floor and Ceiling Runner: L shaped runner, weighing 545 lbs. per 1000 lin. ft. with min. base steel of 0.0329 in.,
- B. Gypsum Lath
1. Regular: A gypsum core lathing panel surfaced with absorptive paper on front, back, and long edges and complying with ASTM C 1396 (Gold Bond Kal-Kore Brand Plaster Base or equal).
    - a. Thickness: 1/2 in. or 5/8 in.
    - b. Width: 4 ft.
    - c. Length: 8 ft. through 16 ft.
    - d. Edges: Square or Tapered.
  2. Fire-Rated: A gypsum core lathing panel with additives to enhance the fire resistance of the core and surfaced with absorptive paper on front, back, and long edges and complying with ASTM C 1396, Type X.

- a. Thickness: 1/2 in. (Gold Bond Kal-Kore Brand Fire-Shield C Plaster Base or equal) or 5/8 in. (Gold Bond Kal-Kore Brand Fire-Shield and Fire-Shield C Plaster Base or equal).
- b. Width: 4 ft.
- c. Length: 8 ft. through 16 ft.
- d. Edges: Square or Tapered.

C. Gypsum Plaster:

- 1. Base Plaster: Mill-mixed high strength gypsum plaster complying with ASTM C 587 (Gold Bond Kal-Kote Brand Base Coat Plaster or equal).
- 2. Finish Plaster: Mill-mixed gypsum plaster for smooth finish complying with ASTM C 587 (Gold Bond Kal-Kote Brand Smooth Finish Plaster or equal).

D. Water: Potable.

2.03 ACCESSORIES

- A. Joint Reinforcing Tape: 2-1/16 in. wide paper reinforcing tape (ProForm Brand Joint Tape or equal) or 2-1/2 in. wide coated fiberglass reinforcing tape (Gold Bond Kal-Mesh Tape or equal).
- B. Corner Bead: Formed steel nose with 2-1/2 in. expanded metal flanges, weighing 200 lbs. per 1000 lin. ft. with min. base steel of 0.0179 in., galvanized (Gold Bond No.1 Expanded Corner Bead or equal).
- C. Casing Bead: J shaped steel bead with expanded metal flange for 1/2 in., 5/8 in. and 3/4 in. grounds, weighing 200 lbs., 210 lbs. and 220 lbs. per 1000 lin. ft., galvanized (Gold Bond No. 66 Expanded Flange Square Casing or equal).
- D. Control Joint: Extruded vinyl formed with V shaped slot covered with removable flexible vinyl strip and complying with ASTM C 1047.
- E. Tie Wire: Manufacturer's standard soft, annealed steel protected by Class 1 zinc coating and manufactured in accordance with ASTM A 641.
- F. Hanger Wire: 8 ga. galvanized steel wire.
- G. Fasteners:
  - 1. Nails: As recommended by the manufacturer.
  - 2. Screws: ASTM C 954 or ASTM C 1002 or both with heads, threads, points, and finish as recommended by the manufacturer.

2.04 MIXES

- A. Proportions and Procedures: In accordance with ASTM C 842 and the manufacturer's recommendations.



### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. Install gypsum lath, plaster and accessories in accordance with the following ASTM Standards and manufacturer's recommendations:
  - 1. ASTM Standards:
    - a. Gypsum Lath, and Accessories: C 841.
    - b. Gypsum Plaster: C 842.
  
- B. Metal framing and lath installation
  - 1. General
    - a. Install gypsum lath and accessories in accordance with ASTM C-841 and manufacturer's recommendations.
    - b. All metal framing, accessories, etc with an exterior exposure shall have a zinc alloy finish.
    - c. Splice continuous running members by overlapping and interlocking or nesting and by wire tying with double loop near each end of lap. Lap the runner channels 12" and furring members 8".
  - 2. Furring and channel installation
    - a. Install in accordance with ASTM C-841 and manufacturer's recommendations.
    - b. Attach channels at right angle to studs at 16" o.c.
    - c. Locate channels 2" from floor and within 6" of ceiling
    - d. Extend channels into all corners and attach to corner framing.
  - 3. Accessory Applications
    - a. Anchor all accessories to substrates 8" o.c. along both flanges.
    - b. Corner Bead: Install at all external corners
    - c. Control and expansion joints: install where indicated on plans or as recommended by the manufacturer. Apply sealant to fill gap.
    - d. Casing Beads: Install where indicated on plans and at all openings and exposed terminations of plaster work.
    - e. Control joints
      - 1. Walls: Maximum distance between control joints to be 30'.
      - 2. Ceilings: Maximum distance between control joints to be 30' with a maximum undivided area of 900 sq. ft.
  
- C. Preparations for Plastering
  - 1. Clean substrates by removing loose materials and coatings.
  - 2. Reinforce openings with diagonal strips of metal lath installed at the corners.
  
- D. Plaster Installation
  - 1. General
    - a. Install in accordance with ASTM C-842 and manufacturer's recommendations.
    - b. Coordinate plaster installation with the protection of existing materials and finishes.
    - c. No surface shall project beyond the grounds and shall be even, true, free from blisters, plaster droppings, trowel marks, discolorations or any other defects.
    - d. Plaster shall not be used or worked after it has partly set.
    - e. Finishing coat shall not be applied upon a base containing frost.

- f. The finish coat shall be protected against freezing for 24 hours after application.
- g. All breaks, cracks and defects shall be repaired as required to provide a completed job to the satisfaction of the architect.
- h. Grounds shall be a minimum of 5/8" thick from the face of the lath.
- i. Total thickness of base and finish coats to be 1/8".

### 3.02 TOLERANCES

- A. For flatness of surface, do not exceed 1/4 inch in 8 feet for bow or warp of surface and for plumb and level.

### 3.03 CLEANING

- A. Clean work under provisions of Section 01 70 00.
- B. Clean all plaster from floors, glass, metal trim, door frames, etc.
- C. Remove all debris, scaffolding, etc. from site.
- D. All surfaces shall be cleaned as required to accept new finishes.

### 3.04 PROTECTION OF FINISHED WORK

- A. Protect finished work under provisions of Section 01 70 00.

END OF SECTION

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SECTION 09 30 13

CERAMIC TILE

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract, including the General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 SECTION INCLUDES

- A. Ceramic tile application where indicated.

1.03 REFERENCES

- A. ANSI/TCA A118.4 - Latex-Portland Cement Mortar.  
B. ANSI/TCA A136.1 - Organic Adhesives for Installation of Ceramic Tile, Type 1 and Type 2.  
C. ANSI/TCA A137.1 - Specifications for Ceramic Tile.  
D. ASTM C-150, Type 1 - Portland Cement Mortar  
E. TCA (Tile Council of America) - handbook for Ceramic Tile Installation.

1.04 SUBMITTALS

- A. Submit product data for ceramic tile under provisions of Section 01 33 00.  
B. Submit product data indicating material specifications, characteristics, and instructions for using adhesives and grouts.  
C. Submit samples for ceramic tile under provisions of Section 01 33 00.  
D. Sustainable Design Submittal:  
1. Provide documentation indicating percentages of post-consumer and pre-consumer recycled content.  
2. Identify each regional material along with the location of its harvest, extraction, or manufacture.

1.05 QUALITY ASSURANCE

- A. Conform to TCA Handbook for Ceramic Tile Installation.  
B. When requested by the Architect, schedule and hold a pre-installation meeting prior to start of work on this section as stipulated in Specification Section 01 31 00 to verify project requirements,

substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.

To attend: Architect, Owners Representative, General Contractor, Approved Installer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and protect products under provisions of Section 01 60 00.
- B. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not install adhesives in a closed, unventilated environment.
- B. Maintain 50 degrees F during installation of mortar materials and for 7 days after completion.
- C. All materials are to be low VOC.

1.08 MAINTENANCE DATA

- A. Submit maintenance data on all materials under the provisions of Section 01 78 00.
- B. Submit data including cleaning methods, solutions recommended, and stain removal methods.

1.09 WARRANTY

- A. Provide five year warranty under provisions of Section 01 78 00.
- B. Warranty: Include coverage for defective material.

1.10 EXTRA MATERIALS

- A. Furnish under provisions of Section 01 78 00.
- B. Supply minimum 2% of each type tile and color used, properly packaged for long term storage.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS

- A. Dal-Tile
- B. Other Acceptable Manufacturers
  - 1. American Olean
  - 2. Florida Tile
- C. Substitutions: Under provisions of Section 01 60 00.

## 2.02 MATERIALS

- A. Mosaic Wall Tile: Dal-Tile (CT7 as noted on Material Schedule):
1. Porcelain type unglazed ceramic tile. Absorption less than 0.5%, color to be integral and homogeneous through the unglazed body.
  2. Size to be 2"x2", of combination color and pattern as selected by Architect. Provide all necessary trim and accessories as required.
  3. See Material Schedule for colors and plans for patterns.
- B. Floor Tile
1. Mosaic Floor Tile: Dal-Tile Keystones (CFT1 through CFT6 as noted on the Material Schedule): Porcelain type unglazed ceramic tile.  
Size to be 1/4" thick, 1" hexagon mosaic of combination color and pattern as selected by Architect.  
Grout joint 1/8".  
Provide all necessary trim and accessories as required.  
See Material Schedule for colors and plans for patterns.
- C. Base
1. Porcelain Tile Base (CTB as noted on Material Schedule): Dal-Tile Throughbody porcelain, unpolished with integral cove base.  
Size to be 3" x 6" of color selected by Architect from standard colors.  
Grout joint 1/8".  
Provide all necessary accessories as required.
- D. Grout: Latex-Portland Cement grout conforming to ANSI A118.6. Color to be selected by Architect. Manufacturer: Laticrete Spectralock Pro or equal.
- E. Aluminum Termination Strips for Wall Tile
1. Manufacturer: Schluter Systems
  2. Model: Jolly
    - a. Description: profile with 87° sloped exposed surface with integrated trapezoid-perforated anchoring leg.
    - b. Material and Finish: AE - Satin Anodized Aluminum
    - c. To be used at the top, exposed termination of ceramic wall tile used for a wainscot or backsplash.
- F. Aluminum Outside Wall Tile Corner
1. Manufacturer: Schluter Systems
  2. Model: RONDEC
    - a. Description: bullnose-type profile with symmetrically rounded visible surface with 1/4" (6 mm) radius, integrated trapezoid-perforated anchoring leg, and integrated grout joint spacer.
    - b. Material and Finish: AE - Satin Anodized Aluminum
    - c. Height as required.
    - d. This profile is installed at the outside corner of all ceramic tile wall installations.

- G. Aluminum Wall Cove Base
  - 1. Manufacturer: Schluter Systems
  - 2. Model: DILEX-AHK
    - a. Description: anodized aluminum profile with integrated trapezoid perforated anchoring leg, connected at a 90-degree angle by a cove shaped section with 3/8" (10 mm) radius that forms the visible surface.
    - b. Corners:
      - 1. Provide with matching inside corners
      - 2. Provide with matching outside corners
      - 3. Provide with matching end caps
    - c. Material and Finish: AE - Satin Anodized Aluminum
    - d. This profile is installed as the coved base of all tile wall installations.

### **PART 3 - INSTALLATION**

#### 3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work, and that substrate has cured a minimum of 28 days.
- B. Beginning of installation means installer accepts condition of existing substrate.

#### 3.02 PREPARATION

- A. Protect surrounding work from damage or disfiguration.
- B. Vacuum clean existing substrate and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

#### 3.03 INSTALLATION

##### A. THINSET METHOD

- 1. Floors: Tile shall be installed in accordance with TCA-F113 latex portland cement mortar.
- 2. Walls - All wall tile installed over cementitious backer board is to be installed in accordance with TCA-W244 latex portland cement mortar.
- 3. Walls - All wall tile installed over masonry is to be installed in accordance with TCA-W202 with latex portland cement mortar.

- B. Apply clear, elastomeric, mildew-resistant silicone rubber caulking to junction of tile and dissimilar materials and at junction of dissimilar planes.
  - a. Provide and install clear, elastomeric, mildew-resistant silicone rubber caulking between the tub and ceramic tile finished walls. Submit the product data for the caulking material to Architect for approval. Caulking is to be applied neatly in a thin, even and smooth manner appropriate to cover the gap between the tile and tub and formed in a concave shape. The installation of the caulk will be reviewed by the Architect and if the finished product is

deemed not to the level of quality expected, the Contractor will replace it at their expense to attain quality work approved by the Architect.

### 3.04 APPLICATION

- A. Lay tile to pattern provided by Architect.
- B. Cut and fit tile tight to penetrations through tile. Form corners and bases neatly. Align floor and base joints.
- C. Coved base wall tile is to be installed so top of curved portion is level with surface of ceramic tile floor.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- E. Sound tile after setting. Replace hollow sounding units.
- F. Keep control joints free of adhesive or grout.
- G. Allow tile to set for a minimum of 48 hours prior to grouting.
- H. Grout tile joints. Grout width to be the minimum required by the tile manufacturer unless noted otherwise.
- I. Ceramic wall tile and base must be installed on only cementitious backer board, concrete or masonry.
- J. Apply sealant to junction of tile and dissimilar materials and at junction of dissimilar planes.

### 3.05 CLEANING

- A. Upon completion of the various portions of his work, the tile contractor shall remove all unused materials, rubbish, etc., that have accumulated as a result of this work.
- B. After the pointing has sufficiently set or hardened, all tile on walls and vertical surfaces, or floors and horizontal surfaces, shall be thoroughly cleaned in an approved manner. All traces of cement or dust accumulations shall be completely removed. In cases where acid solutions are required to clean the face of the finished tile work of surplus grouting or mortar used for pointing, all exposed hardware shall be first covered by a heavy coating of vaseline to protect the metal from the possible effects of the acid or its fumes. Acid solution shall not be used for cleaning glazed tile.
- C. The Tile Contractor shall give the tile work one thorough final cleaning when so instructed by the General Contractor or Architect.
- D. Seal all grout with a clear sealer as recommended by the grout manufacturer.



3.06 PROTECTION OF FINISHED WORK

- A. Protect finished work under provisions of Section 01 70 00.
- B. Protect finished floor with heavy covering during construction.
- C. Do not permit traffic on floor for a minimum of 7 days after grouting.

END OF SECTION

SECTION 09 51 23

ACOUSTICAL CEILING SYSTEMS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The furnishing and installation of acoustical and suspension ceiling systems.
- B. See Alternate No.1

1.02 REFERENCES

- A. Federal Specification SS-S-118B acoustical tile and panel properties.
- B. AMA 1-11 - Sound transmission
- C. ASTM C423 - Sound absorption
- D. ASTM C635 - Metal suspension system properties
- E. ASTM C636 - Acoustical ceiling system installation procedures
- F. UL - Underwriters Laboratories, Inc.

1.03 SYSTEM DESCRIPTION

- A. Acoustical material and suspension systems, including all necessary hangers, hanger wires, grillage, splines, and supporting hardware, shall be furnished and installed as required to create a completed ceiling system.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Include manufacturer's specifications of materials and installation instructions.
- C. Samples: Submit two 6" x 12" samples of panels and two of the metal suspension system.
- D. Test reports: Submit data indicating the following ratings:
  - NRC (Noise reduction coefficient)
  - CAC (Ceiling Attenuation Class)
  - Light reflectance.
  - Flame spread
  - Smoke developed

1.05 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Section 01 78 00.

- B. Submit cleaning and maintenance data including procedures for stain removal and cleaning.

1.06 QUALITY CONTROL

- A. Work shall be performed in accordance with Section 01 45 00.

1.07 QUALIFICATIONS

- A. Installer: Company specializing in installing suspended acoustical ceilings with minimum of three years documented experience.

1.08 REGULATORY REQUIREMENTS

- A. Conform to the manufacturer's recommendations to achieve the fire resistive ratings as listed by Underwriters Laboratories, Inc. (Class A)

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
- B. Storage shall be in building, closed to the weather with temperatures ranging from 60°F to 85°F at not more than 70% relative humidity.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Do not install acoustical ceiling system when building. Interior temperature is below 60°F, above 90°F or above 70% relative humidity.
- B. These conditions shall be maintained 24 hours prior to, during and after installation.

1.11 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on drawings. Any inconsistencies shall be reported to the architect prior to installation.

1.12 SEQUENCING

- A. Installation of panels may commence only after an inspection of all electrical, mechanical and plumbing work has been completed.

1.13 COORDINATION

- A. Coordinate work under provisions of Section 01 31 00.

1.14 WARRANTY

- A. Provide 10 year warranty for the standard acoustical ceiling system under provisions of Section 01 78 00.

1.15 EXTRA MATERIALS

- A. Furnish under provisions of Section 01 78 00.
- B. Provide minimum of 10 panels or 1% of the total of each type of panel installed. (which ever is greater) The additional panels shall be properly packaged for long term storage.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS

- A. Acoustical panels
  - 1. Armstrong
  - 2. Other acceptable manufacturers offering equivalent products.
    - a. USG
- B. Suspension System
  - 1. Armstrong
  - 2. Other acceptable manufacturers offering equivalent products.
    - a. Chicago Metallic Corp.
    - b. USG
- C. Substitutions: Under provisions of Section 01 60 00.

2.02 MATERIALS

- A. Acoustical Panels
  - 1. Acoustical ceiling tile
    - a. Calla, Square Tegular  
 (Model No. 2824: 24"x24"x 1' thick)  
 (ACT-1 as noted on Material Schedule):
      - 1. Water felted mineral fiber panel.
      - 2. 9/16" square tegular
      - 3. Surface texture: Smooth
      - 4. Light reflectance = 0.86
      - 5. Flame spread = 25 or less
      - 6. Smoke developed = 50 or less
      - 7. NRC = 0.85
      - 8. CAC = 35
      - 9. Class A fire rating
      - 10. Total recycled content: minimum 50%
      - 11. Color: White
- B. Suspension Systems
  - 1. Standard Exposed Grids

- a. Suprafine XL 9/16" (Coordinate with ACT-1 acoustical panels)
  - 1. Hot dipped galvanized steel with white baked polyester paint finish.
  - 2. Intermediate duty main runners and cross tees with 9/16" flange face.
  - 3. Wall angles shall be straight edge and corner caps shall be of same materials and finish.
  - 4. Suspend with galvanized steel wire.
  - 5. Total recycled content: minimum 25%

C. Provide Techzone ceiling system with integrated technical services with ceiling ACT-1.

### 2.03 COLORS

A. All colors to be selected from manufacturer's standard colors.

### 2.03 SIZE

A. All ceiling panels shall be 2'x2'.

## **PART 3 - EXECUTION**

### 3.01 EXAMINATION

A. Verify that all components in the ceiling plenum are installed. The building shall be in proper condition to receive the acoustical materials and suspension system before any of the material shall be installed. The acoustical material shall be installed under conditions of normal occupancy. All wet work shall be completed, dry, and the building fully enclosed.

### 3.02 PROTECTION

A. Protect existing elements surrounding the work of this section from damage or disfigurement.

### 3.03 INSTALLATION

- A. Install all acoustical materials and suspension systems in strict accordance with the manufacturer's instructions.
- B. Main runners shall be installed on 24 inch centers and suspended by hanger wire spaced not more than 48 inches on center along the main runners.
- C. Cross tees shall be 24 inches in length and shall be spaced 24 inches on center along the main runner to form 2'x2' modules as scheduled on the drawings.
- D. Install wall moldings at intersection of suspended ceiling and all vertical surfaces.
- E. Miter corners where wall moldings intersect or install corner caps.
- F. The acoustical panels shall not be used to support any other materials except fiberglass thermal/sound control insulation installed in the thickness, density and manner specified by the manufacturer.

3.04 ASSOCIATED METAL FRAMING

- A. Provide metal framing as required to support light fixtures, piping, HVAC equipment and ductwork below acoustical ceilings or as required to span across/over/under suspended equipment.  
Coordinate with the associated MEP contract documents.  
See Section 05 50 00 - Miscellaneous Metal Work for additional information.

3.05 CLEANING

- A. Clean under provisions of Section 01 70 00.

END OF SECTION

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SECTION 09 64 00

WOOD STRIP FLOORING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Vapor barrier
- B. Wood flooring
- C. Surface finishing

1.02 SUBMITTALS

- A. Submit product data under provisions of Section 01300.
- B. Submit samples indicating colors and finishes.

1.03 MAINTENANCE DATA

- A. Submit maintenance information under provisions of Section 01700.

1.04 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three experience.
- B. Installer: Company specializing in installing the work described in this section with minimum three years experience.

1.07 COORDINATION

- A. Coordinate all work under the provisions of Section 01 20 00.

1.08 EXTRA MATERIALS

- A. Furnish under provisions of Section 01 78 00.
- B. Provide minimum of 1% of the total of each type of flooring installed. The additional planks shall be properly packaged for long term storage.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Wood Flooring
  - 1. Species: Red Oak or White Oak as required to match existing.
  - 2. Grade: Second and better



3. Cut: Edge grain
4. Width: 3 inches
5. Thickness: 3/4 inch
6. Length: Random - 24 inches minimum
7. Edge: Tongue and groove with square side edge
8. Moisture content: 12 to 14 percent

- B. Vapor Barrier
1. 15# building felt
- C. Nails: Type as recommended

## 2.02 FINISH

- A. Floor finish: Two Component polyurethane

## **PART 3 - EXECUTION**

### 3.01 EXAMINATION

- A. Verify surface of the subfloor is smooth and level and ready to receive work.
- B. Beginning of installation means acceptance of existing substrate and site conditions.

### 3.02 PREPARATION

- A. Clean subfloor surface thoroughly.

### 3.03 INSTALLATION

- A. Cover subfloor with vapor barrier. Lap all edges 2 inches minimum and staple in place.
- B. Install flooring symmetrical about the room's center point and parallel to the width of the room.
- C. Blind nail flooring in accordance with flooring industry standards.
- D. Install flooring strips with square ends set flush and tight.
- E. Provide transition strips at all door openings and at changes in flooring materials.
- F. Provide 1/4 inch expansion space along walls and all penetrations.

### 3.04 SANDING

- A. Sand flooring to a smooth, even and uniform surface.
- B. Remove sanding dust from entire surface by vacuum or tack.

3.05 FINISHING

- A. Apply three coats of polyurethane in accordance with finish manufacturer's instructions.

3.06 CLEANING

- A. Clean work under provisions of 01 78 00.

3.07 PROTECTION OF FINISHED WORK

- A. Protect finished work under provisions of Section 01 43 00.
- B. Do not permit traffic over unprotected floor surface.

END OF SECTION

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SECTION 09 65 00

RESILIENT FLOORING

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 WORK INCLUDES

- A. Installation of resilient flooring and accessories as indicated.

1.03 RELATED SECTIONS

- A. Section 09 21 16 - Steel Framed Drywall System

1.04 REFERENCES

- A. ASTM E84 - Surface Burning Characteristics of Building Materials.  
B. FS SS-W-40 - Wall Base: Rubber and Vinyl Plastic.

1.05 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01 33 00.  
B. Provide product data on specified products, describing physical and performance characteristics sizes, patterns and colors available.  
C. Submit samples under provisions of Section 01 33 00.  
D. Submit 6 inch long samples of base material for each color specified.  
E. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

1.06 OPERATION AND MAINTENANCE DATA

- A. Submit cleaning and maintenance data under provisions of Section 01 78 00.  
B. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-finishing.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle work to site under provision of Section 01 60 00.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Store materials for three days prior to installation in area of installation to achieve temperature stability.
- B. Maintain minimum 70 degrees F air temperature at flooring installation areas for three days prior to, during, and 24 hours after installation of materials.

1.09 EXTRA MATERIALS

- A. Furnish under provisions of Section 01 78 00.
- B. Provide 10 lineal feet of base of each material required for Project, for maintenance use.
- C. Clearly identify each box.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS

- A. Rubber base and edge guards, Rubber Stair Treads  
 Subject to compliance with requirements of this Specification Section, provide products listed herein from the following:
  - 1. Basis of Design: Johnsonite/Tarkett
  - 2. Other acceptable manufacturers offering equivalent products.
    - a. Flexco
    - b. Roppe
- B. Substitutions: Under provisions of Section 01 60 00.

2.02 MATERIALS

- A. Rubber Wall Base and Chair Rail - Millwork:  
 (B1, B3, B4 Bases and CRI for the Chair rail as noted on the Material Schedule)  
 See Material Schedule on Drawing A6.3 for model numbers and colors.  
 Manufactured by Johnsonite/Tarkett or equal
- B. Rubber Wall Base (straight wall base):  
 (B5 as noted on the Material Schedule)  
 See Material Schedule on Drawing A6.3 for model numbers and colors.  
 Manufactured by Roppe or equal
- C. Edge guards or Adaptors: Beveled type, matte finish; color as selected by Architect.  
 Johnsonite Model EG-G, H or J. Provide edge guards at all exposed edges.  
 Johnsonite Model CTA-A or CTA-D. Provide adaptors at all dissimilar materials (i.e. vinyl tile and carpet).
- D. Rubber stair treads: (Rub1 as noted on the Material Schedule)
  - 1. Color to be manufacturer's marbled, color as selected by Architect.  
 The leading edge of all treads and at the nosing of both main and intermediate landings are

all to have a full width, 2" wide co-extruded contrasting solid color insert in standard color as selected by Architect.

2. Manufactured by Roppe or equal
3. Material Characteristics
  - a. Manufactured from a homogeneous composition of 100% synthetic rubber.
  - b. Complies with requirements for ASTM F 2169 Standard Specification for Resilient Stair Treads, Type TS, Class 1 and 2, Group 1 and 2.
  - c. Hardness: ASTM D 2240 – Not less than 85 Shore A.
  - d. Abrasion Resistance: ASTM D 3389 – less than 1 gram weight loss.
  - e. ASTM D 2047, Standard Test Method for Static Coefficient of Friction of Polish- Coated Flooring of 0.6 or greater.
  - f. ASTM E 648, Standard Test Method for Critical Radiant Flux of 0.45 watts/cm<sup>2</sup> or greater, Class I.
  - g. Tread with 2" wide co-extruded contrasting color insert.
  - h. Limited Commercial Warranty: 5 years
4. Install in accordance with manufacturer's instructions.
5. No rubber risers.

### 2.03 COLORS SELECTION

- A. All colors shall be selected by the Architect from the manufacturer's standard color selections.

### 2.04 ACCESSORIES

- A. Subfloor Filler: White premix latex; mix with water to produce cementitious paste. "Armstrong" S-180 Latex underlayment.
- B. Primers and Adhesives: Low VOC; types recommended by flooring manufacturer for specific materials and as required to maintain product warranty.

## **PART 3 - EXECUTION**

### 3.01 EXAMINATION

- A. When requested by the Architect, schedule and hold a pre-installation meeting prior to start of work on this section as stipulated in Specification Section 01 31 00 to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.  
To attend: Architect, Owners Representative, General Contractor, Approved Installer.
- B. Verify that surfaces are smooth and flat with maximum variation of 1/8 inch in 10 ft., and are ready to receive work.
- C. Documented moisture testing must be conducted on ALL concrete substrates, regardless of the grade level and age using both of the following methods.
  1. Test method ASTM F-1869 result is to be 5.0 lb. MVTR or lower.
  2. Test method ASTM F-2170 result to be less than 75 % RH.
  3. Concrete is to exhibit negative alkalinity, carbonization, or dusting.
- D. Beginning of installation means acceptance of existing substrate and site conditions.

3.02 INSTALLATION - BASE MATERIAL

- A. Fit joints tight and vertical.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends use premolded units.
- C. Install base on solid backing. Bond tight to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.
- E. Install straight and level to variation of plus or minus 1/8 inch over 10 feet.
- F. Provide coved base at all hard surface flooring and straight base at all carpet.

3.03 PROTECTION

- A. Prohibit traffic on floor finish for 48 hours after installation.

3.04 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean surfaces in accordance with manufacturer's instructions.

END OF SECTION

SECTION 09 68 55

CARPET

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Prepare surfaces to receive carpet.
- B. Apply glue down carpeting on surfaces where indicated, complete with required accessories.
- C. Install edge guards where carpeting terminates at other floor finishes.

1.02 RELATED WORK

- A. Section 09 65 00 - Resilient Flooring: Wall base and edge guards.

1.03 SUBMITTALS

- A. Submit samples under provisions of Section 01 33 00.
- B. Submit minimum 3"x5" carpet sample of each color of manufacturer's standard colors for architect's selection.
- C. Contractor shall submit larger samples of any standard color if requested by the Architect.
- D. Submit product information indicating conformance with fire code requirements for finishes.

1.04 REGULATORY REQUIREMENTS

- A. Materials must be tested and in compliance with State Code requirements for interior finishes.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Do not commence with carpet installation until painting and finishing work is complete and ceilings and overhead work, tested, approved, and completed.
- B. Maintain room temperature at minimum 60 degrees F for at least 24 hours prior to installation, and relative humidity at approximately that at which the area is to be maintained.
- C. Provide sufficient lighting.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products under provisions of Section 01 60 00.

1.07 CARPET IDENTIFICATION: All carpeting delivered to the project for installation shall have proper identification. Labels shall include data relative to manufacturer, quality, lot number, characteristics and



color. Carpeting not conforming to the specifications or Architect's approved selection will not be acceptable.

1.08 EXTRA MATERIALS

- A. Furnish under provisions of Section 01 78 00.
- B. Provide minimum of 5% of the total quantity of carpet of each color, type and pattern installed. The additional carpet shall be properly packaged for long term storage.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS

- A. Carpet shall be as manufactured by Forbo  
(Indicated on drawings as CPT3 through CPT8.)
- B. Substitutions under provisions of Section 01 60 00.

2.02 MATERIALS

- A. Sheet Carpet
  - 1. Product Data
 

Manufacturer	Forbo Flooring Systems
Carpet style name	Flotex Colour Collection Sheet Flocked Flooring
Patterns	See Material Schedule on Drawing A6.3.
Colors:	To be selected by Architect from manufacturer's standard colors.
Tile Size	50 cm x 50 cm
Total thickness	5.0 mm
Wear Layer composition	100% polyamide 6.6
Backing	recycled vinyl cushioned backing
  - 2. Performance:
 

Flame radiant panel test:	Meets NFPA Class 1 when tested under ASTM E-648 glue down.
Smoke density:	NBS smoke chamber NFPA-258 (ASTM E-662) – Less than 450.
  - 3. Warranty:
 

Warranty:	Standard manufacturer's warranty
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- B. Seam Cement: Seam cement shall be as recommended by the carpet manufacturer. All seams to be bonded neatly on the same plane.
- C. Adhesives: Shall be as recommended by the carpet manufacturer to conform to carpet warranty. Apply with serrated trowel as recommended by manufacturer.
  - 1. VOC Limits: Provide adhesives with VOC content not more than 50g/L when calculated according to 40 CFR 59, Subpart D (EPA method 24).

- 2.03 SAMPLES: Of materials shall be furnished to the Architect for approval within 30 days of contract award to ensure delivery of material when required.

**PART 3 - EXECUTION**

- 3.01 **INSTALLATION:** Shall be delayed until all surrounding work has been completed. Sub-floor must be smooth, firm and clean. Fill in all cracks in the floor as well as expansion joints with good grade crack filler. All installed carpeting to receive covering to protect appearance. All spots and stains shall be promptly removed.
- 3.02 **INSTALLATION PROCEDURES:** The carpets shall be direct glue following recommended procedures for installation furnished in each roll or carpet shall be closely followed. Unsatisfactory installation resulting from work performed not in accordance with manufacturer's recommendations shall be the responsibility of the carpet contractor. Particular attention should be paid to recommendations for application of floor covering adhesive and seam cement.
- 3.03 **SEAMS:** Carpet shall be installed with a minimum use of cross seams and as few seams as possible. No seams shall be allowed at doorways or corridors that are perpendicular to doorway. Seam diagram must be submitted and approved by the Architect.
- 3.04 **CLEANING**
- A. Clean work under provisions of 01 70 00.
  - B. All trash, wrapping paper, selvages shall be removed from the job site. All large excess pieces of usable carpet shall be left with the Owner for future repairs.
  - C. Perform the following operations immediately after installing carpet:
    - 1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.
- 3.05 **PROTECTION OF FINISHED WORK**
- A. Protect the installed carpet under provisions of section 01 70 00.
  - B. Prohibit traffic on new carpet flooring for 24 hours after the completion of installation.
  - C. Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period.

END OF SECTION

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SECTION 09 72 50

WALL COVERINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract, including the General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.02 SCOPE: Furnishing and installing of all wall covering, as shown on the drawings, the finish schedule and as herein specified.

1.03 RELATED SECTIONS

- A. Section 09 21 16 - Steel Framed Drywall Systems

1.04 REFERENCES

- A. ASTM E84 - Surface burning characteristics of building materials.

1.05 PERFORMANCE REQUIREMENTS

- A. All wallcovering must be NFPA Class A rated.
- B. Toxicity - not to develop toxic or noxious fumes under fire as measured by the animal inhalation test and certified by an approved testing laboratory.
- C. Stain resistance - No appreciable residual stain when properly cleaned after 24 hours exposure to hair oils, furniture polish, fruit juices, liquor, pencil, ball-point pen, lipstick, rubber heels and like substances.

1.06 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product data: provide data on all available patterns selected.
- C. Samples: Submit samples of all patterns available also indicating the standard color range available.
- D. Manufacturer's installation instructions indicating their recommended procedures.
- E. Manufacturer's Certificate: Certify that products submitted must meet or exceed the specified requirements.

1.07 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with a minimum of 5 years experience.
- B. Installer: Company specializing in performing the work of this section with a minimum of three years documented experience.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
- B. Accept material on site in its original packing. Inspect for damage. Do not store in upright position. Maintain temperature in storage area above 55 degrees F.

1.09 ENVIRONMENTAL REQUIREMENTS

- A. Maintain constant minimum temperature of 60 degrees F. in all areas scheduled for installation for at least 72 hours before installation and maintain temperature until final completion.

1.10 WARRANTY

- A. Provide a one year minimum warranty under provisions of Section 01 78 00.
- B. Warranty: Include coverage for defective material.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS AND PRODUCT INFORMATION

- A. Wolf Gordon
  - 1. Style: Redondo (WC1)
    - a. Content: 100% Olefin Composite
    - b. Backing: Dense Polyester/Cotton
    - c. Width/Weight: 52" / 33 oz per linear yard
    - d. Hanging info: Reverse hang, Random match
    - e. Colors selected by Architect from manufacturer's standard colors.
- B. Substitutions: Under provisions of Section 01 60 00.
- C. See drawings for location of wallcovering.

2.02 ACCESSORY MATERIALS

- A. Adhesive: As recommended by manufacturer with mildewcide.
- B. Primer: As recommended by manufacturer

### **PART 3 - EXECUTION**

#### **3.01 INSPECTION**

- A. When requested by the Architect, schedule and hold a pre-installation meeting prior to start of work on this section as stipulated in Specification Section 01 31 00 to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.  
To attend: Architect, Owners Representative, General Contractor, Approved Installer.
- B. Examine all surfaces to receive wallcovering before beginning work to determine that they are sound, dry, clean and ready to receive final finish.
- C. Correct defects that could affect quality of finished work.
- D. Plaster and masonry surfaces shall not contain more than 5.5% moisture.
- E. Starting wallcovering work shall be construed as evidence of acceptance of conditions which work will be done.

#### **3.02 SURFACE PREPARATION**

- A. Prepare wall in accordance with manufacturer's instructions.

#### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Follow manufacturer's directions for mixing and applying adhesive and primer.
- C. Before cutting, examine pattern and color and determine that they match approved samples. Examine patterned material for repeat in design.
- D. Mix paste thoroughly. Apply paste on back of material with brush or roller in a thin, even coat over entire panel.
- E. Use panels in exact order as they are cut from roll.
- F. Trim on selvage of each panel deep enough to ensure color conformity using a straight edge on a cutting table, or use the wall cutting procedures (without scoring the substrata) acceptable to the Architect.
- G. Install panels on the hanging surface, reversing every other panel of non-match patterns unless otherwise instructed by the manufacturer.
- H. Fill in over doors and windows with panels cut in consecutive order from the roll.
- I. Smooth fabric to hanging surface with stiff bristled sweep brush or a flexible broad-knife to eliminate air bubbles and insure adhesion.

- J. Vertical joints shall not occur less than 6" from outside or inside corners.
- K. Where applicable, install wallcovering before installation of plumbing, casing, bases, cabinets, etc.
- L. Remove excess paste from seam before making next seam. Use a sponge or cloth dampened with clean water, wipe clean with dry towel.
- M. Any variation in color and/or pattern match shall be immediately communicated to the manufacturer's representative for his inspection before proceeding further with installation.

3.04 CLEAN-UP

- A. Upon completion of the work, remove surplus materials, rubbish and debris resulting from the operations under this Section including equipment and implements of service, and leave the entire structure and site insofar as the work of this Section is concerned in a neat, clean and acceptable condition.

END OF SECTION

SECTION 09 84 14

ACOUSTICAL WALL PANELS

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes the following:
  - 1. Acoustical Wall Panels
- B. Related Documents:  
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.
- C. See Alternate No. 1

1.2 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Shop Drawings: Show fabrication and installation details for acoustical wall panels, including plans, elevations, sections, details and attachment to other work.
- C. Submittals: Furnish 4" x 6" sample, color chart showing all manufacture's full range of colors, texture and patterns available for each type of acoustical product specified.
- D. Product Test Report: From a qualified testing agency indicating wall panels comply with requirements.
- E. Qualification Data: For firms specified in "Quality Assurance" Article to demonstrate their capabilities and experience.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualification: Manufacture shall have a minimum of 5 years' experience in production of specified products and shall furnish supporting documentation showing completed jobs of approximately the same size and scope.
- B. Fire Test Reports: Provide acoustical wall panels with the following surface-burning characteristics as per ASTM E 84.
  - 1. Flame Spread: 25 or less
  - 2. Smoke Developed: 450 or less
- C. Acoustical Test Report: Provide acoustical test report from a qualified testing agency indicating acoustical wall panels meets 0.45 – 0.90 NRC per ASTM C-423.



#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
- B. Protect Acoustical Wall Panels from excessive moisture when shipping, storing, and handling. Deliver in unopened skids and store in a dry place with adequate air circulation. Do not delivery material until all wet-work has been completed.

### **PART 2 – PRODUCTS**

#### 2.1 MANUFACTURER

- A. Manufacturer: MDC Interior Solutions  
 400 High Grove Blvd, Glendale Heights, IL 60139  
 Ph. (800) 621-4006  
 Web: ifo@mdcwall.com
- B. Substitutions: Under provisions of Section 01 60 00.

#### 2.2 WALL PANELS, GENERAL

- A. Acoustical Wall Panels shall be 1/2" thick. Standard panel construction, wrapped with panel manufacturer's standard full line of fabric.  
 (Listed on the drawings as AWP1)
  - 1. Product: Zintra, Sculpted Acoustic Wall Panel
  - 2. Pattern: Cosmic
  - 3. Noise Reduction Coefficient: NRC 0.45 – 0.90
  - 4. Panel Width: As indicted, up to 47.5 inches wide (See drawings for sizes, shape and quantity)
  - 5. Panel Length: As indicated, up to 108 inches long. (See drawings for sizes, shape and quantity)
  - 6. All edges will be fully wrapped with mounting as indicated.
  - 7. Color: Selected by Architect from manufacturer's standard colors.

#### 2.3 MOUNTING

- A. Back-Mounting Accessories: Manufacturer's standard accessories for securely mounting panels, of type and size indicated and complying with the following requirements:
  - 1. Impaling Clips: Clip is mounted to the wall, adhesive applied on wall around clip, then panel pressed into place until flush with wall.

#### 2.4 FLAMMABILITY RATING

- A. All components shall have a Class A Flammability rating per ASTM E- 84: Surface Burning Characteristics of Building Materials, with a Flame Spread of 25 or less and Smoke Developed of 450 or less

### PART 3 – EXECUTION

#### 3.1 INSTALLATION

- A. Install Acoustical Wall panels in locations indicated. Comply with manufacturer's written instructions for installation of panels using type of mounting accessories indicated or, if not indicated, as recommended by manufacturer.

#### 3.2 CLEANING

- A. After completion of installation of panels, remove dust and other foreign material according to manufactures written instructions.
- B. Remove surplus material, rubbish, and debris resulting from panel installation, on completion of the work, and leave areas of installation in a neat and clean condition.

#### 3.3 PROTECTION OF FINISHED WORK

- A. Protect finished product and work under provisions of Section 01 70 00.

END OF SECTION

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SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents:  
The Drawings and general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 Requirements, apply to the work in this Section.

1.01 SECTION INCLUDES

- A. Finish painting and priming of all items exposed and identified to receive a finish.

1.02 RELATED SECTIONS

- A. Surfaces scheduled or indicated to be painted.  
B. Touch up of shop coats provided under other sections unless specifically included in that section.  
C. Exposed structural steel.  
D. Finish painting of exposed piping, conduit, exposed raceways, metal hardware, exposed equipment including rooftop equipment supplied under mechanical and electrical trades, when such items have not been factory pre-painted.  
E. Examine the specifications for the various other trades and become thoroughly familiar with all their provisions regarding what they are painting. All exposed-to-view surfaces that are left unfinished by the requirements of other specifications shall be painted or finished as a part of this work.

1.03 REFERENCES

- A. ANSI/ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.  
B. ASTM D2016 - Test Method for Moisture Content of Wood.  
C. Federal Specifications

1.04 DEFINITIONS

- A. Conform to ANSI/ASTM D16 for interpretation of terms used in this Section.  
B. The term "paint" as used herein includes enamels, paint, emulsions, varnishes, stains, sealers and other coatings whether used as prime, intermediate or finish coats.

1.05 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.

- B. Submit manufacturer's technical data sheet and Material Safety Data Sheets (MSDS) for each scheduled coating, giving the descriptive data, curing time, mixing, thinning and application instructions. Provide certification that paint was formulated within lead or mercury.
- C. Submit manufacturer's fan deck of color chips for selection of colors by the Architect.
- D. Samples
  - 1. At the request of the Architect, prepare and submit paint samples on the materials he requires for approval.
  - 2. Prepare and submit stained wood samples on the type and quality of wood specified for use on the project as requested by the Architect.
- E. Submit a list of all interior paints and coatings used in the project that are addressed by the Green Seal Standard GS-11 and state the Volatile Organic Compounds (VOC) content for each product.

#### 1.06 QUALIFICATIONS

- A. Product Manufacturer: Company specializing in manufacturing quality paint and finish products with five years experience.
- B. Applicator: Company specializing in commercial painting and finishing with 3 years documented experience.

#### 1.07 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame/fuel/smoke rating requirements for finishes.

#### 1.08 FIELD SAMPLES

- A. At the request of the Architect, provide field sample panel, one complete surface of each color scheme illustrating special coating, color, texture, finish and workmanship.
- B. Locate where directed by the Architect.
- C. If approved, sample area will serve as a minimum standard for Work throughout the building. Accepted sample may remain as part of the Work.

#### 1.09 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and protect products under provisions of Section 01 60 00.
- B. Deliver all paint materials to the job site ready mixed and in their original containers with all labels intact and legible at time of use.
- C. Store only the approved materials at the job site, and store only in a suitable and designated area restricted to the storage of paint materials and related equipment.
- D. Use all means necessary to insure the safe storage and use of paint materials.

- E. All soiled or used rags, waste and trash must be disposed off site every night and every precaution taken to avoid the danger of fire.
- F. All materials must be stored at above freezing temperature.

#### 1.10 ENVIRONMENTAL REQUIREMENTS

- A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during, and 48 hours after application of finishes.
- B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent.
- C. Application Temperature for Paints: 50 degrees F minimum, and 95 degrees F maximum.
- D. Application Temperature for Varnish and Other Natural Finishes: 65 degrees F minimum and 90 degrees F maximum.
- E. Provide lighting level of 80 ft. candles measured mid-height at substrate surface.
- F. Do not apply paint to areas where dust is being generated.

#### 1.11 COORDINATION

- A. Coordinate work under provisions of Section 01 31 00.

#### 1.12 EXTRA MATERIALS

- A. Furnish under provisions of Section 01 78 00 extra paint equaling approximately 10% of each color and gloss used in each coating material used, tightly sealed in clearly labeled containers.
- B. The additional material shall be properly packaged for long term storage and delivered to the Owner.

### PART 2 - PRODUCTS

#### 2.01 MANUFACTURER:

- A. Subject to compliance with requirements of this Specification Section, provide products listed herein from one of the following:
  - 1. Paint:
    - a. Sherwin Williams
    - b. Pittsburgh Paint (PPG Industries, Inc)
    - c. Benjamin Moore Paint
  - 2. Transparent Finishes
    - a. Fine Paints of Europe: Eurolux Waterborne varnishes
    - b. Sutherland Welles Ltd.: Sutherland Wells Low-Toxic wood finishes.

NOTE: Varnish and stain to have a maximum VOC of 50.
- B. Substitutions: Under provisions of Section 01 60 00.

2.02 COMPATIBILITY:

- A. All paint materials and equipment shall be compatible in use; finish coats shall be compatible with prime coats; prime coats shall be compatible with the surface to be coated; all tools and equipment shall be compatible with the coating to be applied.
- B. Thinners, when used, shall be only those thinners recommended for that purpose by the manufacturer of the material to be thinned.

2.03 MIXING AND TINTING:

- A. Accomplish job mixing and tinting only when acceptable to the Architect. Mix only in mixing pails placed in suitable sized non-ferrous or oxide resistant metal pans.
- B. Tints and all other additives or thinners shall be used only as recommended by the manufacturer of the paint and as approved by the Architect.

**PART 3 - EXECUTION**

3.01 EXAMINATION

- A. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
- B. In the event of discrepancy, immediately notify the Architect.
- C. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 PREPARATION:

- A. General
  - 1. Prior to all surface preparation and painting operations, completely mask, remove or otherwise adequately protect all hardware, accessories, machined surfaces, plates, lighting fixtures, and similar items in contact with painted surfaces but not schedule to receive paint.
  - 2. Remove all existing loose, flaking and poor condition paint by scraping and then sanding surface. Sand as required to feather edges of remaining paint.
  - 3. Spot prime all exposed nails and other metals that are to be painted with emulsion paints, using a primer recommended by the manufacturer of the coating system.
  - 4. Surface to be painted shall be thoroughly clean and dry. All concrete and masonry work shall be completely cured.
  - 5. All items concealing surfaces to be painted that are readily detachable shall be removed for the painting of said surface. Reinstall upon completion of space.
  - 6. Surfaces in spaces above suspended ceilings and chases are not required to be painted unless otherwise indicated.
  - 7. Doors shall be removed to paint the bottom edges.
  - 8. Provide minimum of one coat of primer and minimum of two coats of finish paint. The shop priming coat, as occurring, shall substitute for the field applied primer coat.

9. Complete coverage is required. Provide additional coats to areas that do not show complete coverage.
- B. Preparation of wood surfaces:
1. Clean all wood surfaces until they are free from dirt, oil, and all other foreign substance.
  2. Smooth all finished wood surfaces exposed to view, using the proper sandpaper.
  3. Where so required, use varying degrees of coarseness in sandpaper to produce uniformly textured and unmarred wood surfaces.
  4. On small, dry, seasoned knots, thoroughly scrape and clean the surface and apply one coat of good quality knot-sealer before application of the priming coat.
  5. On large, open, unseasoned knots, scrape off all pitch and thoroughly clean the area, followed by an application of one coat of good quality knot-sealer.
  6. Back prime all wood mouldings and trim.
  7. Fill nail holes, cracks, open joints and other defects with oil based putty after priming coat has dried. Color to match finish color.
- C. Preparation of metal surfaces:
1. Galvanized Metal
    - a. Clean all surfaces thoroughly with solvent until they are completely free from dirt, oil and grease.
    - b. Thoroughly treat the cleaned surface with phosphoric acid etch.
    - c. Remove all excess etching solution and allow to dry completely before application of paint.
    - d. Prepare surface in accordance with recommendations of directions of manufacturer of rust-inhibitive primer.
    - e. New galvanized metal is to be allowed to weather 6 months prior to coating. If weathering is not possible, clean with solvents per manufacturer's instructions, and verify test patch adhesion with Architect.
  2. Other Metals
    - a. Thoroughly clean all surfaces until they are completely free from dust, dirt, oil, loose rust and grease.
    - b. All shop-primed surfaces that have been marred or abraded shall be wire-brushed and touched up with the same material as the shop coat prior to painting of surfaces.
- D. Preparation of Gypsum Wallboard
1. All surfaces must be thoroughly clean and joint treatment dry.
  2. Steel corner beads shall be spot primed before water based paint is applied.
  3. Do not apply solvent based coatings directly over unpainted wallboard.
- E. Preparation of Plaster Surfaces
1. All holes and cracks in plaster surfaces shall be filled with patching plaster before painting.



2. Before painting plaster, the surfaces shall be tested with a moisture-testing device. Paint or sealer shall not be applied on plaster when the moisture content exceeds 5.5 percent. Test sufficient areas in each space as often as necessary to determine the proper moisture content for painting.

### 3.03 APPLICATION

#### A. General

1. Apply all paint in accordance with manufacturer's instructions.
2. Do not apply the initial coating until moisture-meter reading of the surface is within limits recommended by the paint materials manufacturer.
3. Allow sufficient drying time between coats in accordance with manufacturer's recommendations.
4. Oil base and Oleo resinous solvent type paints shall be considered dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
5. Schedule all cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
6. Sand, dust, and clean between coats to remove all defects visible to the unaided eye from a distance of five feet.
7. Finished surfaces shall be free from runs, drops, ridges, waves, laps, sags and unnecessary brush marks.
8. Slightly vary the color of succeeding coats.
9. Primer and intermediate coats shall be tinted to approximately the tint of finish coats.
10. Damaged painting shall be retouched before applying the succeeding coat.
11. Do not apply additional coats until completed coat has been inspected and approved by the Architect.
12. Only inspected and approved coats of paint will be considered in determining the number of coats applied.
13. Edges of paint abutting other materials or colors shall be clean and sharp with no overlapping.
14. Refinish entire wall where portion of finish has been damaged or is not acceptable.
15. Refinish all woodwork that has been removed and reset.
16. Paint all exposed, plastic drain pipes, electrical conduits, uninsulated metal piping, ceiling & wall access panels, sprinkler piping and ductwork, unless otherwise noted. Verify with Architect prior to painting these items.
17. Colors will be selected by Architect from manufacturer's full color palette.
18. Unlimited number of different colors allowed per project. Multiple colors are allowed per room. Opposite sides of door frames, window frames and doors may be painted different colors at Architect's discretion. Number of colors is to be determined by Architect and included in a color schedule that will be assembled after submittal of color sample fanex by the General Contractor prior to commencement of work.
19. All steel door frames are to be painted using a brush or roller and back-brushed.
20. Spray painting is not allowed unless all sprayed surfaces are back-brushed using brushes or rollers.

### 3.04 STAIN & VARNISH PREPARATION AND APPLICATION

- A. Prepare and apply stain and varnish in accordance with manufacturer's instructions.
- B. Do not apply at temperatures lower than 50°F or under high humidity conditions. Surface must be dry, clean and free from grease.
- C. New woodwork: Apply stain and then three coats of varnish. Allow at least a four hour interval for drying between coats. Sand lightly between coats with 220 grit paper or finer and tack dust free. Follow manufacturer's instructions if thinning is required.
- D. Apply varnish with a first quality synthetic brush or lamb's wool applicator
- E. Clean-Up is accomplished using warm water and detergent immediately after use
- F. Drying: Dust free in 45 minutes; recoatable in 4 hours

### 3.04 CLEANING

- A. Prevent accidental spilling of paint materials and, in event of such spill, immediately remove all spilled material, the waste of equipment used to clean up the spill, and wash the surfaces to their original undamaged condition.
- B. After completion of the painting work, all glass shall be cleaned on both sides by professional window cleaners. The use of acid solution or water containing caustic soaps will not be permitted. The edge of compound shall not be disturbed by scrapers. Upon completion of contract, the glass shall be left whole, free of any defacements or rattle and shall be clean on both sides.
- C. Prior to final inspection visually inspect all surfaces and remove all paint and traces of paint from surfaces not scheduled to be painted.
- D. Paint storage space shall be thoroughly cleaned following the completion of all work.
- E. All waste materials shall be disposed of properly and in accordance with all Federal, State, and Local regulations. Do not dispose of waste materials in the building sanitary waste system.

### 3.05 WASTE MANAGEMENT

- A. Set aside extra paint for future color matches. All paint unused by the Contractor is to be delivered to the Owner in sealed containers.
- B. Close and tightly seal all partly used paint and finish containers and store in a well-ventilated, safe area at moderate temperature.
- C. Do not dispose of paints or solvents by pouring on ground. Place in designated containers for proper disposal.

3.06 PAINTING SCHEDULE

NOTE: Colors on the Drawing Material Schedule were selected from Benjamin Moore.

- A. Exterior: Based on Sherwin Williams Paints unless noted otherwise.
1. Wood
    - 1st Coat: S-W A-100 Exterior Fast Dry Alkyd Wood Primer  
(4 mils wet, 2.2 mils dry)
    - 2nd & 3rd Coats: S-W Resilience Latex Satin K43 Series  
(4 mils wet, 1.52 mils dry per coat)
  2. Galvanized Metal (designated to be painted)
    - 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series  
(5-10 mils wet, 2-4 mils dry)
    - 2nd & 3rd Coats: S-W Pro Industrial DTM Acrylic Semi-Gloss, B66-1150 Series  
(6 mils wet, 2.4 mils dry per coat)
- C. Interior: Based on Benjamin Moore Paints unless noted otherwise.
1. WOOD - (Doors, Trim)  
Semi-gloss Finish (Benjamin Moore)
    - 1st Coat: BM Ultra Spec 500 Interior Latex primer (N534)  
(4.3 mils wet, 1.4 mils dry).
    - 2nd & 3rd Coats: BM Scuff-X interior semi-gloss finish (487)  
(4 - 4.5 mils wet, 1.6 – 1.8 mils dry per coat)
  2. DRYWALL - (Walls, Gypsum Board, etc.)  
Matte Finish (Benjamin Moore)
    - 1st Coat: BM Ultra Spec 500 Interior Latex primer (N534)  
(4.3 mils wet, 1.4 mils dry).
    - 2nd & 3rd Coats: BM Scuff-X interior matte finish (484)  
(4 - 4.5 mils wet, 1.6 – 1.8 mils dry per coat)
  3. CEILINGS – (Gypsum Board or Plaster)  
Flat Finish (Benjamin Moore)
    - 1st Coat: BM Fresh Start High-Hiding All Purpose Primer (046)  
(4 mils wet, 1.5 mils dry).
    - 2nd & 3rd Coats: BM Waterborne Ceiling Paint (508)  
(3.8 mils wet, 1.4 mils dry per coat).

4. METAL – (Steel pipe railings)  
 Gloss Finish (Benjamin Moore)  
 1st Coat: BM Ultra Spec HP Acrylic Metal Primer (HP04)  
 (1.7 – 2.3 mils dry)  
 2nd & 3rd Coats: BM Scuff-X interior gloss finish (487)  
 (4 - 4.5 mils wet, 1.6 – 1.8 mils dry per coat)
  
5. METAL - (Doors & frames, Structural Steel Columns, Joists, Trusses, Beams,  
 Miscellaneous & Ornamental Iron, Structural Iron, Ferrous Metal) (exposed,  
 uninsulated metal piping and ductwork)  
 Semi-Gloss Finish (Benjamin Moore)  
 1st Coat: BM Ultra Spec HP Acrylic Metal Primer (HP04)  
 (1.7 – 2.3 mils dry)  
 2nd & 3rd Coats: BM Scuff-X interior semi-gloss finish (487)  
 (4 - 4.5 mils wet, 1.6 – 1.8 mils dry per coat)
  
6. STAINED WOOD (doors, including jamb edges & trim)  
  
 3 Coats of satin varnish, lightly sanded between coats.  
 a. Stain coat: 1 coat Stain  
 b. Seal coat: 1 coat Clear Satin Finish  
 c. First coat: 1 coat Sanding Sealer  
 d. Finish coat: 1 coat Clear Satin Finish  
 (Apply in accordance with manufacturer's instructions)

END OF SECTION

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SECTION 10 21 13.19

SOLID PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Solid plastic toilet compartments including the following:
  - 1. Floor mounted overhead-braced toilet compartments.
  - 2. Floor & wall mounted urinal screens.

1.2 RELATED SECTIONS

- A. Section 06 20 10 - Carpentry and Millwork
- B. Section 09 30 13 - Ceramic Tile

1.3 REFERENCES

- A. ASTM International (ASTM):
  - 1. ASTM B 85 - Standard Specification for Aluminum-Alloy Die Castings.
  - 2. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- B. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings: Provide layout drawings and installation details with location and type of hardware required.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A company regularly engaged in manufacture of products specified in this section, and whose products have been in satisfactory use under similar service conditions for not less than 5 years.

- B. Installer Qualifications: A company regularly engaged in installation of products specified in this Section, with a minimum of 5 years experience.
- C. Performance Requirements:
  - 1. Material Fire Ratings:
    - a. National Fire Protection Association (NFPA) 286: Pass.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
- B. Store products in manufacturer's unopened packaging until ready for installation.

#### 1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

#### 1.8 WARRANTY

- A. Manufacturer guarantees its plastic against breakage, corrosion, and delamination under normal conditions for 25 years from the date of receipt by the customer under provisions of Section 01 78 00. If materials are found to be defective during that period for reasons listed above, the materials will be replaced free of charge. (Labor not included in warranty.)

### **PART 2 PRODUCTS**

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Scranton Products, which is located at: 801 E. Corey St.; Scranton, PA 18505; Toll Free Tel: 800-445-5148; Fax: 855-376-6161; Email: [request info \(info@scrantonproducts.com\)](mailto:request_info@scrantonproducts.com); Web: <http://www.scrantonproducts.com>
- B. Other acceptable manufacturers offering equivalent products:
  - 1. ASI Accurate Partitions Corporation
  - 2. AMPCO

#### 2.2 MATERIAL

- A. Plastic Panels: High density polyethylene (HDPE) suitable for exposed applications, waterproof, non-absorbent, and graffiti-resistant textured surface;
  - 1. Fire-resistance Rating: Tested in Accordance with NFPA 286. Submit test documentation confirming compliance.
- B. Aluminum Extrusions: ASTM B221, 6463-T5 alloy and temper.
- C. Aluminum Die Castings: ASTM B85, A380 alloy.
- D. Stainless Steel Castings: ASTM A167, Type 304.
- E. Rubber: Abrasion resistant Styrene Butadiene Rubber, 65 to 80 Shore A durometer, black.

### 2.3 SOLID PLASTIC TOILET COMPARTMENTS AND SCREENS

- A. Basis of Design: Eclipse Toilet Partitions as manufactured by and supplied by Scranton Products.
  - 1. Style: Floor mounted overhead-braced toilet compartments.
- B. Doors and Panels: High density polyethylene (HDPE), fabricated from SEQ CHAPTER 1 extruded polymer resins, forming single thickness panel.
  - 1. Waterproof and nonabsorbent, with self-lubricating surface, resistant to marks by pens, pencils, markers, and other writing instruments.
  - 2. Thickness: 1 inch (25 mm).
  - 3. Edges: Shiplap.
- C. Panel Color: Orange peel surface texture, color selected by Architect from manufacturer's standard colors. Minimum of eight colors.
- D. Doors and Dividing Panels:
  - 1. High Privacy:
    - a. Height: 62 inches (1575 mm) high and mounted at 8 inches (203 mm) above the finished floor.
- E. Metal Posts: 82.75 inches (2102 mm) high, heavy duty extruded aluminum, clear anodized finish, fastened to foot with stainless steel tamper resistant screw.
- F. Hidden Shoe (Foot): One-piece molded polyethylene invisible shoe inserted into metal post and secured to metal post with stainless steel tamper resistant screw.
- G. Headrail Cap and Corner Cap: One-piece molded polyethylene secured to metal post with stainless steel tamper resistant screw; adjustable to level headrail to finished floor.
- H. Wall Brackets: Continuous heavy duty extruded aluminum, clear anodized finish, inserted into slotted panel and fastened to panels with stainless steel tamper resistant screws.
  - 1. Type: Double ear bracket aluminum.
  - 2. Length: 61 inches (1550 mm).
- I. Headrail: Heavy duty extruded aluminum, designer anti-grip design, clear anodized finish, fastened to headrail bracket with stainless steel tamper resistant screw and to headrail cap or corner cap with stainless steel tamper resistant screw.
  - 1. Headrail Brackets: Heavy duty extruded aluminum, clear anodized finish, secured to wall with stainless steel tamper screws.
- J. Door Hardware:
  - 1. Hinges:
    - a. Edge-mounted helix style stainless steel continuous hinge.
      - 1) Closing degree: 5 degrees.
      - 2) Comes to a full close on its own weight
  - 2. Occupancy Indicator Latch and Housing:
    - a. Material: Satin stainless steel.
    - b. Occupancy indicators: Red for occupied and green for not occupied.
    - c. Slide bolt and button.
  - 3. Coat Hook and Door Bumper Combination:
    - a. Material: Chrome plated Zamak
    - b. Handicap Door: Equip with second door pull and door stop.



4. Door Pulls: Chrome plated Zamak
- K. Urinal screens are to be attached to the wall with a continuous bracket and floor mounted with a post on the leading edge of the panel.  
Screen size to be 28" x 62" unless noted otherwise on drawings.

### **PART 3 EXECUTION**

#### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Examine areas to receive toilet partitions, screens, and shower compartments for correct height and spacing of anchorage/blocking and plumbing fixtures that affect installation of partitions. Report discrepancies to the architect.

#### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Install partitions rigid, straight, plumb, and level.
- C. Locate bottom edge of doors and panels 9 inches above finished floor.
- D. Clearance at vertical edges of doors shall be uniform top to bottom and shall not exceed 3/8 inch (9.5 mm).
- E. No evidence of cutting, drilling, and/or patching shall be visible on the finished work.
- F. Finished surfaces shall be cleaned after installation and be left free of imperfections.

#### 3.4 ADJUSTING

- A. Adjust and lubricate hardware for proper operation after installation.
  1. Hinges on in-swing doors are factory set to hold doors in the open position when unlatched as shown on drawings.
  2. Hinges on out-swing doors are factory set to return to the fully closed position.

#### 3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 10 28 13

TOILET ROOM ACCESSORIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The furnishing and installation of toilet room accessories as shown on drawings and herein specified.

1.02 RELATED SECTIONS

- A. Section 09 21 16 – Steel Framed Drywall Systems
- B. Section 10 21 13.19 - Solid Plastic toilet partitions

1.03 SUBMITTALS

- A. Submit under provisions of Section 01 33 00
- B. Product data: Include manufacturer's illustration of item and installation instructions.
- C. Samples: Provide one sample of item if requested by the Architect. (Sample will be returned)

1.04 QUALITY CONTROL

- A. Work is to be performed in accordance with Section 01 45 00.

1.05 REGULATORY REQUIREMENTS

- A. Conform to all applicable Federal, State and local codes and laws including the state accessibility code for location and height requirements.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Section 01 60 00.

1.07 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on drawings. Any inconsistencies or conflicts shall be reported to the Architect prior to installation.

1.08 COORDINATION

- A. Coordinate work under provisions of Section 01 31 00.
- B. Coordinate the work with finish installers, and contractor for all wall openings, blocking, anchors, etc.

1.09 WARRANTY

- A. Provide warranty under provisions of Section 01 78 00.
- B. The bathroom accessories shall be warranted for one year from the date of purchase.

1.10 OPERATION AND MAINTENANCE

- A. All keys, tools and instruction sheets supplied by the manufacturer are to be turned over to the owner.

**PART 2 - PRODUCTS**

2.01 MANUFACTURER

- A. American Specialties, Inc.
- B. Other acceptable manufacturers offering equivalent products.
  - 1. Bobrick Washroom Equipment, Inc.
  - 2. A&J Washroom Accessories, Inc.

2.02 PRODUCT LIST

- A. Paper towel dispenser/disposal  
 (T1 as noted on Drawings)  
 American Specialties, Inc. Model 6467, recessed 4-1/4" deep rough opening, 5 gallon capacity waste container
- B. Toilet tissue dispenser  
 (T2 & T5 as noted on Drawings)  
 American Specialties, Inc. Model 0042, Single jumbo roll, surface mounted, Type 304 stainless steel with satin finish, viewing slot and tumbler lock.
- C. Feminine napkin disposal  
 (T3 as noted on Drawings)  
 American Specialties, Inc. Model 0473-A, surface mounted, Type 304 stainless steel with satin finish.
- D. Soap dispenser  
 (T4 as noted on Drawings)  
 American Specialties, Inc. Model 0326, recessed, horizontal, liquid dispenser, Type 304 stainless steel with satin finish.
- E. Mirror  
 (T6 as noted on Drawings)  
 American Specialties, Inc. Model 0600 – B2436, Stainless steel angle frame with satin finish and tempered glass mirror. Provide concealed wall hanger with theft resistant locking device. 24" wide x 36" high.

- F. Grab Bars  
American Specialties, Inc. Model 3801-P straight grab bar, Lengths as shown on drawings, All grab bars are of 18 gauge, 1-1/2" outside diameter, Type 304 stainless steel with satin finish and peened grip, concealed mounting plate and theft resistant screws with snap-on flange cover.
- G. Baby Changing Station  
(T7 as noted on Drawings)  
(American Specialties, Inc. Model 9013-9, horizontal, Type 304 stainless steel – satin finish, surface mounted on the wall with stainless steel collar)

## 2.03 MATERIALS

- A. Sheet Steel: ASTM A366, cold rolled stretcher leveled; 125 oz/sq. ft. galvanized coating.
- B. Stainless Steel Sheet: ASTM A167, commercial grade, 22 gauge.
- C. Stainless Steel Tubing: ASTM A269, commercial grade, seamless welded.
- D. Adhesive: Epoxy type contact cement.
- E. Fasteners, Screws, and Bolts: Hot dip galvanized. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

## 2.04 FINISHING

- A. All accessories shall be stainless steel with a satin finish except if specified otherwise in the schedule.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Provide rough-in dimensions and/or templates to site as required.
- B. Verify exact location of accessories with the Architect prior to installation.
- C. Provide all blocking, backup, anchors, mounting kits, etc. as required to install accessories.

### 3.02 INSTALLATION

- A. Install accessories in accordance with manufacturer's specifications and instructions.
- B. Install accessories plumb, square and level.
- C. Accessories shall be anchored securely.
- D. All items shall be attached with theft resistant fasteners.

3.03 CLEANING

- A. Clean work under provisions of Section 01 70 00.
- B. Protective plastic cover shall remain on accessories until all finishes and tile cleaning is completed.
- C. Upon installation and cleaning by all other trades, the protective covers may be removed and the accessories cleaned as recommended by the manufacturer.
- D. Do not use steel wool or other abrasives on stainless steel.

3.04 ACCESSORY SCHEDULE

Men's Room 107

- 3 mirrors 24"W x 36"H
- 1 42" grab bar
- 1 36" grab bar
- 1 18" grab bar
- 1 paper towel dispenser/disposal
- 2 soap dispensers
- 2 toilet tissue dispensers
- 1 Baby Changing Station

Women's Room 108

- 3 mirrors 24"W x 36"H
- 1 42" grab bar
- 1 36" grab bar
- 1 18" grab bar
- 1 paper towel dispenser/disposal
- 2 soap dispensers
- 5 feminine napkin disposals
- 5 toilet tissue dispensers
- 1 Baby Changing Station

END OF SECTION

SECTION 12 61 15

REUPHOLSTERING OF EXISTING AUDITORIUM SEATING

PART 1: GENERAL SPECIFICATIONS

- 1.1 Summary:  
Reupholster approximately fifty eight (58) existing fixed chairs.
- 1.2 Submittals:
- A. Submit under provisions of Section 01 33 00.
  - B. Product data for each fabric specified.
  - C. Samples for verification & finish selection to include:
    - 1. Initial finish selections to be made from manufacturer's standard color and fabric guides.
    - 2. Final upholstery fabric selection to be approved from fabric mills standard swatch size if available.
  - D. Maintenance instructions and inspection guidelines furnished for each fabric.
  - E. Manufacturer's standard warranty.
- 1.3 Quality Assurance:
- A. Source Limitations:
    - 1. Obtain fabric of a single dye lot for each color and pattern of fabric required except when yardage requirement exceeds maximum dye lot. Multiple dye lots shall be color matched for quality assurance.
  - B. Fire Performance Characteristics of Upholstered Seating:
    - 1. Fabric shall be Class 1 according to DOC CS 191 and 16 CFR 1610.61, tested according to California Technical Bulletin 117.
    - 2. Padding shall comply with California Technical Bulletin 117.
- 1.4 Project Conditions:
- A. Environmental Limitations:  
Do not deliver or install seating until wet work in spaces is complete and dry, work above ceilings is complete, and permanent HVAC system is operating and maintaining ambient temperature and humidity at occupancy levels during the remainder of the construction period.
  - B. Field Measurements:  
Take field measurements to verify dimensions and locations of all existing seats.

- 1.5 Project Coordination:
- A. Do not deliver or install seating until space is free of lifts and/or scaffolding used by other trades which may interfere with installation and/or damage seating.
- 1.6 Warranty:
- A. Provide a manufacturer's warranty covering the material and workmanship for the specified warranty period from date of final acceptance.
  - B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty documents executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owners may have under Contract Documents.
  - C. The Contractor shall provide a warranty on all craftsmanship of no less than three (3) years from the acceptance of completed work.

**PART 2: PRODUCTS**

- 2.1 MANUFACTURERS
- A. Manufacturer: Sedia Systems, Inc.
  - B. Substitutions: Under provisions of Section 01 60 00.
- 2.2 Materials and Finishes:
- A. Fabric shall be 100 percent Marquesa Lana, Color to be Shire Midnight
  - B. Furnish extra materials from the same production run that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
    - 1. Furnish five (5) seat and five (5) back fabric covers for each type and size of cushion.

**PART 3: EXECUTION**

- 3.1 Examination
- A. Prior to layout and installation of reupholstered chairs examine floors, risers, and other adjacent work and conditions, with Contractor present, for compliance with requirements and other conditions affecting performance of the work.
  - B. Proceed with installation only after unsatisfactory conditions have been corrected.
- 3.2 Installation
- A. Provide labor to remove existing chairs and match bottom and back of chairs with new updated fabric. Contractor will also provide labor to install chairs back into place. Contractor is to coordinate with the Owner the final location of all seating. Contractor is to

also include new hardware should any lock nuts, washers, torx screws or bolts get misplaced or damaged.

- B. Due to inherent inconsistencies in original construction, the individual seats and backs are not interchangeable. Therefore, in order to ensure reinstallation of each piece back to its correct location, the Contractor will remove seats and backs and label each with position location information. The identification labels will be located as to not interfere with the work and must remain attached. Contractor will reinstall seats and backs after work is completed.
- C. Contractor will remove existing fabric, foam, cording, etc. from all chair seats and backs. Contractor is responsible for removal, transport, and proper disposal of all waste materials
- D. Contractor will supply new chair seat foam. Seat foam to be high quality, high density, commercial-grade foam (High Resiliency Upholstery Foam Firm HR-50 or better). Foam must roll under minimum of 1" at the front of every chair seat.
- E. Contractor will supply new chair back foam. Back foam to be high quality, medium density, commercial-grade foam (High Resiliency Upholstery Foam Medium Firmness HR-30 or better). Foam must roll over minimum of 1" at the top of every chair back.
- F. Reinstall seating so moving components operate smoothly and quietly.

### 3.3 ADJUSTING

- A. Adjust chair backs so that they are properly aligned with each other.
- B. Adjust self-rising seat mechanisms so seats in each row are aligned when in upright position.
- C. Verify that all components and devices are operating properly.
- D. Repair minor abrasions and imperfections in finishes with coating that matches factory-applied finish.
- E. Replace upholstery fabric damaged during installation.

### 3.4 CLEANING AND PROTECTION

- A. Cleaning: Clean Product in accordance with manufacturer instructions prior to Owner's acceptance. Remove construction debris, including cartons from project site and legally dispose of debris.
- B. Protection: Protect installed product and finished surfaces from damage during construction.

END OF SECTION



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**SECTION 22 10 05**

**PLUMBING PIPING**

**PART 1 - GENERAL**

1.01 SECTION INCLUDES

- A. Sanitary waste piping, buried within 5 feet (1500 mm) of building.
- B. Sanitary waste piping, above grade.
- C. Domestic water piping, above grade.
- D. Pipe flanges, unions, and couplings.
- E. Pipe hangers and supports.
- F. Pipe sleeve-seal systems.
- G. Ball valves.
- H. Butterfly valves.
- I. Balancing valves.
- J. Pressure relief valves.
- K. Control and service valves.
- L. Strainers.

1.02 REFERENCE STANDARDS

- A. ANSI Z21.22 - American National Standard for Relief Valves for Hot Water Supply Systems 2015 (Reaffirmed 2020).
- B. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings 2018.
- C. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2018.
- D. ASME B31.9 - Building Services Piping 2020.
- E. ASME BPVC-IV - Boiler and Pressure Vessel Code, Section IV - Rules for Construction of Heating Boilers 2021.
- F. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings 2021.
- G. ASTM B32 - Standard Specification for Solder Metal 2020.
- H. ASTM B88 - Standard Specification for Seamless Copper Water Tube 2020.
- I. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric) 2020.
- J. ASTM B813 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube 2016.
- K. ASTM B828 - Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings 2016.
- L. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings 2020a.
- M. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems 2020.
- N. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings 2021.

- O. ASTM D2855 - Standard Practice for the Two-Step (Primer & Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets 2020.
- P. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- Q. AWWA C550 - Protective Interior Coatings for Valves and Hydrants 2017.
- R. AWWA C651 - Disinfecting Water Mains 2014.
- S. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications 2017 (Revised 2018).
- T. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications 2020.
- U. ICC-ES AC106 - Acceptance Criteria for Predrilled Fasteners (Screw Anchors) in Masonry Elements 2015.
- V. ICC-ES AC308 - Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements 2016.
- W. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2018.
- X. MSS SP-67 - Butterfly Valves 2017.
- Y. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends 2010.
- Z. NSF 61 - Drinking Water System Components - Health Effects 2020.
- AA. NSF 372 - Drinking Water System Components - Lead Content 2020.
- BB. UL (DIR) - Online Certifications Directory Current Edition.
- CC. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

#### 1.03 SUBMITTALS

- A. See Section 01 33 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- C. Project Record Documents: Record actual locations of valves.

#### 1.04 QUALITY ASSURANCE

- A. Perform work in accordance with applicable codes.
- B. Valves: Manufacturer's name and pressure rating marked on valve body.

### **PART 2 - PRODUCTS**

#### 2.01 GENERAL REQUIREMENTS

- A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.
- B. Plenum-Installed Acid Waste Piping: Flame-spread index equal or below 25 and smoke-spread index equal or below 50 according to ASTM E84 or UL 723 tests.

**2.02 SANITARY WASTE PIPING, BURIED WITHIN 5 FEET (1500 MM) OF BUILDING**

- A. Cast Iron Pipe: CISPI 301, hubless.
  - 1. Fittings: Cast iron.
  - 2. Joints: CISPI 310, neoprene gasket and stainless steel clamp and shield assemblies.

**2.03 SANITARY WASTE PIPING, ABOVE GRADE (CONTRACTOR TO MATCH EXISTING OPTIONS ARE SHOWN BELOW.)**

- A. Cast Iron Pipe: ASTM A74, service weight.
  - 1. Fittings: Cast iron.
  - 2. Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.
- B. Cast Iron Pipe: CISPI 301, hubless, service weight.
  - 1. Fittings: Cast iron.
  - 2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.
- C. PVC Pipe: ASTM D2729.
  - 1. Fittings: PVC.
  - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

**2.04 DOMESTIC WATER PIPING, ABOVE GRADE**

- A. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), Drawn (H).
  - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
  - 2. Joints: ASTM B32, alloy Sn95 solder.
  - 3. Mechanical Press Sealed Fittings: Double-pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, nontoxic, synthetic rubber sealing elements.

**2.05 PIPE HANGERS AND SUPPORTS**

- A. Provide hangers and supports that comply with MSS SP-58.
  - 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
  - 2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
  - 3. Trapeze Hangers: Welded steel channel frames attached to structure.
  - 4. Vertical Pipe Support: Steel riser clamp.
- B. Plumbing Piping - Drain, Waste, and Vent:
  - 1. Hangers for Pipe Sizes 1/2 to 1-1/2 inch (15 to 40 mm, DN): Malleable iron, adjustable swivel, split ring.
  - 2. Hangers for Pipe Sizes 2 inch (50 mm, DN) and Over: Carbon steel, adjustable, clevis.
  - 3. Wall Support for Pipe Sizes to 3 inch (80 mm, DN): Cast iron hook.
  - 4. Wall Support for Pipe Sizes 4 inch (100 mm, DN) and Over: Welded steel bracket and wrought steel clamp.
  - 5. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
  - 6. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- C. Plumbing Piping - Water:
  - 1. Hangers for Pipe Sizes 1/2 to 1-1/2 inch (15 to 40 mm, DN): Malleable iron, adjustable swivel, split ring.
  - 2. Hangers for Cold Pipe Sizes 2 inch (50 mm, DN) and Over: Carbon steel, adjustable, clevis.

3. Hangers for Hot Pipe Sizes 2 to 4 inch (50 to 100 mm, DN): Carbon steel, adjustable, clevis.
  4. Hangers for Hot Pipe Sizes 6 inch (150 mm, DN) and Larger: Adjustable steel yoke, cast iron pipe roll, double hanger.
  5. Wall Support for Pipe Sizes Up to 3 inch (80 mm, DN): Cast iron hook.
  6. Wall Support for Pipe Sizes 4 inch (100 mm, DN) and Larger: Welded steel bracket and wrought steel clamp.
  7. Wall Support for Hot Pipe Sizes 6 inch (150 mm, DN) and Larger: Welded steel bracket and wrought steel clamp with adjustable steel yoke and cast iron pipe roll.
  8. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
  9. Floor Support for Hot Pipe Sizes to 4 inch (100 mm, DN): Cast iron adjustable pipe saddle, locknut, nipple, floor flange, and concrete pier or steel support.
  10. Floor Support for Hot Pipe Sizes 6 inch (150 mm, DN) and Larger: Adjustable cast iron pipe roll and stand, steel screws, and concrete pier or steel support.
  11. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- D. Hanger Fasteners: Attach hangers to structure using appropriate fasteners, as follows:
1. Concrete Wedge Expansion Anchors: Comply with ICC-ES AC193.
  2. Masonry Wedge Expansion Anchors: Comply with ICC-ES AC01.
  3. Concrete Screw Type Anchors: Comply with ICC-ES AC193.
  4. Masonry Screw Type Anchors: Comply with ICC-ES AC106.
  5. Concrete Adhesive Type Anchors: Comply with ICC-ES AC308.

## 2.06 PIPE SLEEVE-SEAL SYSTEMS

- A. Modular Mechanical Seals:
1. Elastomer-based interlocking links continuously fill annular space between pipe and wall-sleeve, wall or casing opening.
  2. Watertight seal between pipe and wall-sleeve, wall or casing opening.
  3. Size and select seal component materials in accordance to service requirements.
  4. Service Requirements:
    - a. Corrosion resistant.
    - b. Oil, fuel, gas, and solvent resistant.
    - c. Underground, buried, and wet conditions.
    - d. Fire Resistant: 1 hour, UL (DIR) approved.
    - e. High Temperature, up to 400 deg F (204 deg C).
    - f. Low temperature, down to minus 67 deg F (minus 55 deg C).
  5. Glass reinforced plastic pressure end plates.

## 2.07 BALL VALVES

- A. Construction, 4 inch (100 mm, DN) and Smaller: MSS SP-110, Class 150, 400 psi (2760 kPa) CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.

## 2.08 BUTTERFLY VALVES

- A. Construction 1-1/2 inch (40 mm, DN) and Larger: MSS SP-67, 200 psi (1380 kPa) CWP, cast or ductile iron body, nickel-plated ductile iron disc, resilient replaceable EPDM seat, wafer ends, extended neck, 10 position lever handle.
- B. Provide gear operators for valves 8 inches (150 mm, DN) and larger, and chain-wheel operators for valves mounted over 8 feet (2400 mm) above floor.

## 2.09 BALANCING VALVES

- A. Construction: Class 125, brass or bronze body with union on inlet and outlet, temperature and pressure test plug on inlet and outlet, blowdown/backflush drain.
- B. Manual Operated Y-Pattern Globe, Size 1/2 to 2 inch (15 to 50 mm, DN):
  - 1. Class 125, brass or bronze body, multi-turn handwheel, memory stop, variable orifice, soldered connections, dual PT (hot and cold pressure-temperature) test ports for 300 psi (2,068 kPa), minus 4 to 250 deg F (minus 20 to 121.1 deg C) WOG service.
- C. Automatic Flow Limiting Cartridge, Size 3/4 inch (20 mm, DN):
  - 1. Class 125, brass or bronze body, stainless steel cartridge, threaded connections with built-in union, dual PT (hot and cold pressure-temperature) test ports for 400 psi (2,758 kPa), 0.5 gpm (1.9 Lpm) WOG service.
- D. Automatic Flow Limiting Cartridge with Ball Valve, Size 1/2 to 1 inch (15 to 25 mm, DN):
  - 1. Class 125, brass or bronze body, stainless steel cartridge, leak-proof stem, threaded or soldered connections with built-in union, dual PT (hot and cold pressure-temperature) test ports for 400 psi (2,758 kPa), 0.25 to 1.5 gpm (0.9 to 5.6 Lpm) WOG service.
- E. Calibration: Control flow within five percent of selected rating, over operating pressure range of 10 times minimum pressure required for control, maximum minimum pressure 3.5 psi (24 kPa).

## 2.10 PRESSURE RELIEF VALVES

- A. ANSI Z21.22, AGA certified, bronze body, teflon seat, steel stem and springs, automatic, direct pressure actuated.
- B. Surge Anticipating, Pressure Relief Valves:
  - 1. Size: 1/2 to 40 inch (15 to 1,000 mm, DN).
  - 2. Class 150 flange ends; AWWA C550 compliant cast iron globe valve with elastomeric diaphragm, seat disc, and epoxy coated finish both internally and externally.
  - 3. Differential Pressure Based Dual Pilot-Operator:
    - a. High-Surge Operating Range: 10 to 80 psi (0.7 to 5.5 bar).
    - b. Connected into brass, bronze, or stainless steel pilot piping and fittings.
    - c. Precision fixed-flow restrictor, test needle-valve, strainer, swing check valve, pressure gauges, and isolation valves.

## 2.11 CONTROL AND SERVICE VALVES

- A. Flow Metered Valves:
- B. Flow Control Valves:
  - 1. Size: 1/2 to 40 inch (15 to 1,000 mm, DN), Class 150 flange ends.
  - 2. AWWA C550 compliant cast iron globe valve, elastomeric diaphragm, seat disc and epoxy coated both internally and externally.
  - 3. Differential Pressure Based Rate-of-Flow Pilot-Operator:
    - a. Operating Range: 25 to 50 psi (1.72 to 3.4 Bar).
    - b. Connected into brass, bronze, or copper pilot piping and fittings.

- c. Precision fixed-flow restrictor, strainer, pressure gauges, and isolation valves.

## 2.12 STRAINERS

- A. Size 1/2 inch (15 mm, DN) to 3 inch (80 mm, DN):
1. Class 150, threaded forged bronze Y-pattern body, stainless steel perforated mesh screen with cap, and rated for 150 psi (1,034 kPa), 250 deg F (121.1 deg C) WOG service.
- B. Size 2 inch (50 mm, DN) and Smaller:
1. Threaded brass body for 175 psi (1200 kPa) CWP, Y pattern with 1/32 inch (0.8 mm) stainless steel perforated screen.
  2. Class 150, threaded bronze body 300 psi (2070 kPa) CWP, Y pattern with 1/32 inch (0.8 mm) stainless steel perforated screen.
- C. Size 1-1/2 inch (40 mm, DN) to 4 inch (100 mm, DN):
1. Class 125, flanged iron body, Y pattern with 1/16 inch (1.6 mm) stainless steel perforated screen.

## **PART 3 - EXECUTION**

### 3.01 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

### 3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

### 3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- E. Group piping whenever practical at common elevations.
- F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. See Section 220516.
- G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- H. Provide access where valves and fittings are not exposed.
1. Coordinate size and location of access doors with Section 083100.
- I. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
- J. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.
- K. Sleeve pipes passing through partitions, walls, and floors.

- L. Inserts:
1. Provide inserts for placement in concrete formwork.
  2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
  3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches (100 mm, DN).
  4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
  5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.
- M. Pipe Hangers and Supports:
1. Install in accordance with ASME B31.9.
  2. Support horizontal piping as indicated.
  3. Install hangers to provide minimum 1/2 inch (15 mm) space between finished covering and adjacent work.
  4. Place hangers within 12 inches (300 mm) of each horizontal elbow.
  5. Use hangers with 1-1/2 inch (40 mm) minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
  6. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
  7. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
  8. Provide copper plated hangers and supports for copper piping.
  9. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
  10. Support cast iron drainage piping at every joint.
- N. Pipe Sleeve-Seal Systems:
1. Install manufactured sleeve-seal systems in sleeves located in grade slabs and exterior concrete walls at piping entrances into building.
  2. Provide sealing elements of the size, quantity, and type required for the piping and sleeve inner diameter or penetration diameter.
  3. Locate piping in center of sleeve or penetration.
  4. Install field assembled sleeve-seal system components in annular space between sleeve and piping.
  5. Tighten bolting for a watertight seal.
  6. Install in accordance with manufacturer's recommendations.
- O. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

### 3.04 APPLICATION

- A. Use grooved mechanical couplings and fasteners only in accessible locations.
- B. Install unions downstream of valves and at equipment or apparatus connections.
- C. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
- D. Install gate valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- E. Install globe valves for throttling, bypass, or manual flow control services.
- F. Provide lug end butterfly valves adjacent to equipment when provided to isolate equipment.



- G. Provide spring-loaded check valves on discharge of water pumps.
- H. Provide flow controls in water recirculating systems where indicated.

### 3.05 TOLERANCES

- A. Drainage Piping: Establish invert elevations within 1/2 inch (10 mm) vertically of location indicated and slope to drain at minimum of 1/4 inch per foot (1:50) slope.
- B. Water Piping: Slope at minimum of 1/32 inch per foot (1:400) and arrange to drain at low points.

### 3.06 FIELD TESTS AND INSPECTIONS

- A. Verify and inspect systems according to requirements by the Authority Having Jurisdiction. In the absence of specific test and inspection procedures proceed as indicated below.
- B. Domestic Water Systems:
  - 1. Perform hydrostatic testing for leakage prior to system disinfection.
  - 2. Test Preparation: Close each fixture valve or disconnect and cap each connected fixture.
  - 3. General:
    - a. Fill the system with water and raise static head to 10 psi (345 kPa) above service pressure. Minimum static head of 50 to 150 psi (345 to 1,034 kPa). As an exception, certain codes allow a maximum static pressure of 80 psi (551.6 kPa).
  - 4. Metal Piping Systems Subject to Freezing Conditions:
    - a. Inject 40 psi (275.8 kPa) of compressed air into piping to spot check for leaks with liquid soap. Document and repair leaks as necessary.
    - b. Raise injected compressed air pressure to 1.5 times rated service pressure or minimum pressure of 100 psi (689.5 kPa) for a duration of 2 hours and verify with a gauge that no perceptible pressure drop is measured.
- C. Test Results: Document and certify successful results, otherwise repair, document, and retest.

### 3.07 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A. Disinfect water distribution system in accordance with Section 330110.58.
- B. Prior to starting work, verify system is complete, flushed, and clean.
- C. Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- D. Inject disinfectant, free chlorine in liquid, powder, tablet, or gas form throughout system to obtain 50 to 80 mg/L residual.
- E. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
- F. Maintain disinfectant in system for 24 hours.
- G. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
- H. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
- I. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

### 3.08 SCHEDULES

- A. Pipe Hanger Spacing:
  - 1. Metal Piping:
    - a. Pipe Size: 1/2 inch (15 mm, DN) to 1-1/4 inch (32 mm, DN):
      - 1) Maximum Hanger Spacing: 6.5 ft (2 m).

- 2) Hanger Rod Diameter: 3/8 inches (9 mm).
- b. Pipe Size: 1-1/2 inch (40 mm, DN) to 2 inch (50 mm, DN):
  - 1) Maximum Hanger Spacing: 10 ft (3 m).
  - 2) Hanger Rod Diameter: 3/8 inch (9 mm).
- c. Pipe Size: 2-1/2 inch (65 mm, DN) to 3 inch (80 mm, DN):
  - 1) Maximum Hanger Spacing: 10 ft (3 m).
  - 2) Hanger Rod Diameter: 1/2 inch (13 mm).
- d. Pipe Size: 4 inch (100 mm, DN) to 6 inch (150 mm, DN):
  - 1) Maximum Hanger Spacing: 10 ft (3 m).
  - 2) Hanger Rod Diameter: 5/8 inch (15 mm).
- e. Pipe Size: 8 inch (200 mm, DN) to 12 inch (300 mm, DN):
  - 1) Maximum hanger spacing: 14 ft (4.25 m).
  - 2) Hanger Rod Diameter: 7/8 inch (22 mm).
- f. Pipe Size: 14 inch and Over (350 mm, DN and Over):
  - 1) Maximum Hanger Spacing: 20 ft (6 m).
  - 2) Hanger Rod Diameter: 1 inch (25 mm).
- 2. Plastic Piping:
  - a. All Sizes:
    - 1) Maximum Hanger Spacing: 6 ft (1.8 m).
    - 2) Hanger Rod Diameter: 3/8 inch (9 mm).

END OF SECTION

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SECTION 22 30 00

PLUMBING EQUIPMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Water filters.
- B. Water softeners.
- C. Point-of-use water filters.
- D. Point-of-entry water filters.

1.02 REFERENCE STANDARDS

- A. ICC (IPC) - International Plumbing Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. NSF 61 - Drinking Water System Components - Health Effects 2020.
- E. UL 174 - Standard for Household Electric Storage Tank Water Heaters Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 01 33 00 - Administrative Requirements for submittals procedures.
- B. Product Data:
  - 1. Provide electrical characteristics and connection requirements.
- C. Shop Drawings:
  - 1. Indicate dimensions of tanks, tank lining methods, anchors, attachments, lifting points, tappings, and drains.
- D. Manufacturer's Instructions
- E. Project Record Documents: Record actual locations of components.
- F. Operation and Maintenance Data: Include operation, maintenance, and inspection data, replacement part numbers and availability, and service depot location and telephone number.
- G. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- H. Project Record Documents: Record actual locations of components.
- I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 60 00 - Product Requirements for additional provisions.
  - 2. Extra Pump Seals: One of each type and size.
  - 3. Extra Water Softener Salt: 50 pounds (22.7 kg).

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.
- B. Certifications:
  - 1. Electric Water Heaters: UL listed and labeled to UL 174.

2. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

#### 1.05 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Provide five year manufacturer warranty for domestic water heaters.

### **PART 2 - PRODUCTS**

#### 2.01 WATER FILTERS

- A. Commercial:
  1. Filter Media: Activated carbon.
  2. Glassfiber reinforced plastic tank with valve, 30 gpm (113.6 lpm).
  3. Provide tank manifold assembly for 100 gpm (378 lpm) load.
  4. Provide capped backwash, carbon refill, and sediment removal access.
  5. Potable Water Service: NSF 61 certified.
  6. Drinking Water Service: NSF 61 certified in compliance with ICC (IPC).
  7. Accessories: Preinstalled 24-hour time-clock control, solenoid valve, and external UV lamp.
- B. Service Pressure: 20 to 120 psi (137.8 to 827.4 kPa).
- C. Service Temperature: 40 to 110 degrees F (4.4 to 43.3 degrees C).

#### 2.02 WATER SOFTENERS

- A. Salt-free Water Conditioner (Catalytic Media):
  1. Throughput: Hardness under 3 grains/gallon or ppm (51.3 mg/L).
  2. Capacity: Continuous duty, 10 gpm (38 lpm), mineral-based cartridge type.
  3. Glassfiber reinforced plastic self-standing vertical tank with bypass valve fitting.
  4. Connections: 1 inch (25 mm) manual tank inlet and outlet screwed on bypass fitting.
  5. Accessories:
    - a. Upstream and downstream hose-spigots across unit.
    - b. Provide additional filters to remove chlorine, choramine, and odors.
    - c. Upstream sediment prefilter canister with cartridge and wall bracket.
    - d. Upstream and downstream manual inline (shut-off) and bypass valves.
- B. Salt-Based Ion-Exchange Water Softener:
  1. Capacity: Minimum continuous duty, 10 gpm (38 lpm), potassium based.
  2. Throughput: Hardness under 1 ppm or grain/gallon (17.1 mg/L).
  3. Type: Separate ion exchange and feed tanks.
  4. Tank Materials: Epoxy lined steel ion exchange with one-piece resin for feed.
  5. Solenoid Valves: Brass or other process-resistant suitable material.
  6. Connections: 3/4 inch (20 mm) inlet, outlet, and backwash or regeneration with drain pipe.
  7. Multifunctional Controller:
    - a. Allows metered, timed cycle, or continuous duty usage.
    - b. Full control of both softening and backwashing processes.
    - c. Includes setting to enable automated system water bypass.
    - d. Stores maximum and minimum usage when in continuous duty.
    - e. Displays setting, usage, and flow, date, time, and other related specifics.
    - f. Provides status and historical usage data including ability to filter specifics.

### 2.03 POINT-OF-USE WATER FILTERS

- A. Point-of-Use Application: Provide for faucets, ice makers, sinks, and showers.
- B. Type: Disposable, side positioned, line or tap installed cartridge, canister, or showerhead filter.
- C. Construction: Polymer based material housing with built-in female threaded connections, and internal specific or composite filtering media such as activated carbon, sand, gravel, calcite, limestone, or other mineral media suitable to reduce intended contaminants.
- D. Internal Filter Media: Chemical-free, pH-resilient materials proven to reduce bacteria, chlorine, odors, sediment, and trace metals down to the 0.2 micron particle size.
- E. Maximum Service Requirements: 100 psi (689.4 kPa) and 130 degrees F (54.4 degrees C).

### 2.04 POINT-OF-ENTRY WATER FILTERS

- A. System: Packaged single-stage filter tube or self-standing vessel, factory verified and tested.
- B. Construction:
  - 1. Stainless steel housing with built-in flanged inlet, outlet, and drain connections assembled on fabricated steel base with structural steel framework.
  - 2. Includes self-cleaning internal specific or composite filtering media such as activated carbon, sand, gravel, calcite, limestone, or other mineral media suitable to reduce intended contaminants.
  - 3. Internal Filter Media: Chemical-free, pH-resilient materials proven to reduce bacteria, biofilm, chlorine, odors, sediment, and trace metals down to the 0.2 micron particle size.
- C. Skid-Mounted Control Panel:
  - 1. Panel: NEMA 250 Type 4X with key-operated panel lock and identification tags.
  - 2. Interface: Include color display with built-in pushbuttons, indicators, and hand switches.
  - 3. Prewired into unit-mounted devices including pH sensor, flow sensor, and accessories. Provide cable landing terminals for field-mounted devices and components.
- D. Skid-Mounted Valves: Provide solenoid-actuated drain valve and inlet-to-outlet electrically-actuated bypass valve with position indication.
- E. Maximum Service Requirements: 125 psi (861.8 kPa) and 180 degrees F (82.2 degrees C).

## **PART 3 - EXECUTION**

### 3.01 INSTALLATION

- A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.
- B. Coordinate with plumbing piping and related fuel piping work to achieve operating system.

END OF SECTION

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**SECTION 22 40 00**

**PLUMBING FIXTURES**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Flush valve water closets.
- B. Wall hung urinals.
- C. Lavatories.
- D. Wall-hung, solid surface, multi-station lavatory units.
- E. Under-lavatory pipe supply covers.

**1.02 REFERENCE STANDARDS**

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. ASME A112.6.1M - Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use 1997 (Reaffirmed 2017).
- C. ASME A112.18.1 - Plumbing Supply Fittings 2018, with Errata.
- D. ASME A112.18.9 - Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures 2011 (Reaffirmed 2017).
- E. ASME A112.19.1 - Enameled Cast Iron and Enameled Steel Plumbing Fixtures 2018.
- F. ASME A112.19.2 - Ceramic Plumbing Fixtures 2018, with Errata.
- G. ASME A112.19.4M - Porcelain Enameled Formed Steel Plumbing Fixtures 1994 (Reaffirmed 2009).
- H. ASME A112.19.5 - Flush Valves and Spuds for Water Closets, Urinals, and Tanks 2017.
- I. ASSE 1070 - Performance Requirements for Water Temperature Limiting Devices 2015.
- J. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus 2019.
- K. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2021.
- L. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- M. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi 2015 (Reapproved 2021)e1.
- N. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- O. NSF 61 - Drinking Water System Components - Health Effects 2020.
- P. NSF 372 - Drinking Water System Components - Lead Content 2020.
- Q. UL (DIR) - Online Certifications Directory Current Edition.

**1.03 SUBMITTALS**

- A. See Section 01 33 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.



- C. Manufacturer's Instructions: Indicate installation methods and procedures.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 60 00 - Product Requirements for additional provisions.
  - 2. Extra Faucet Washers: One set of each type and size.
  - 3. Extra Toilet Seats: One of each type and size.
  - 4. Flush Valve Service Kits: One for each type and size.

## **PART 2 - PRODUCTS**

### 2.01 GENERAL REQUIREMENTS

- A. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.
- B. Water Efficiency: EPA WaterSense label is required for all water closets, urinals, lavatory faucets, and showerheads.
- C. Maximum Fixture or Faucet Supply Pressure: 60 psi (4.1 bar) unless stated otherwise.

### 2.02 REGULATORY REQUIREMENTS

- A. Comply with applicable codes for installation of plumbing systems.
- B. Comply with UL (DIR) requirements.
- C. Perform work in accordance with local health department regulations.
- D. Provide certificate of compliance from Authority Having Jurisdiction indicating approval of installation.

### 2.03 FLUSH VALVE WATER CLOSETS

- A. Water Closets:
  - 1. Vitreous china, ASME A112.19.2, floor mounted, siphon jet flush action, china bolt caps.
  - 2. Bowl: ASME A112.19.2; 16.5 inches (420 mm) high with elongated rim.
  - 3. Flush Valve: Exposed (top spud).
  - 4. Flush Operation: Sensor operated.
  - 5. Handle Height: 44 inches (1117 mm) or less.
  - 6. Inlet Size: 1-1/2 inches (38 mm).
  - 7. Trapway Outlet: 4 inch (100 mm, DN).
- B. Flush Valves:
  - 1. Valve Supply Size: 1 inch (25 mm, DN).
  - 2. Valve Outlet Size: 1-1/2 inches (40 mm, DN).
  - 3. Manual Operated:
    - a. Type: ASME A112.18.1 or ASME A112.19.5; diaphragm type complete with vacuum breaker stops, and accessories.
    - b. Supplied Volume Capacity: 1.5 gal (5.7 L) per flush.
  - 4. Sensor-Operated:
    - a. Type: ASME A112.19.5; chloramine-resistant clog-resistant dual-seat diaphragm valve complete with vacuum breaker stops and accessories.
    - b. Mechanism: Solenoid-operated piston or electronic motor-actuated operator with low-voltage powered infrared sensor, and mechanical override or override push button.
    - c. Supplied Volume Capacity: 1.2 gal (4.5 L) per flush.
    - d. Metering: Provide wireless communications into monitoring and logging application.

5. Concealed Type: Rough brass, exposed parts chrome-plated, wall escutcheon, wheel handle stop.
  6. Exposed Type: Chrome-plated, escutcheon, integral screwdriver stop.
  7. Metering Type: Easily accessible adjustment nut.
- C. Toilet Seats:
1. Plastic: Solid, white finish, elongated shape, closed front, slow-closing hinged seat cover, and brass bolts with covers.
  2. Plastic: Solid, white finish, elongated shape, open front, slow-closing hinged seat cover, extended back complete with self-sustaining hinges, and brass bolts with covers.
  3. Plastic: Black finish, open front, extended back, self-sustaining hinge, brass bolts, with cover.
  4. Plastic: Black finish, open front, extended back, self-sustaining hinge, brass bolts, with cover.
- D. Water Closet Carriers:
1. ASME A112.6.1M; adjustable cast iron frame, integral drain hub and vent, adjustable spud, lugs for floor and wall attachment, threaded fixture studs with nuts and washers.

#### 2.04 WALL HUNG URINALS

- A. Vitreous china, ASME A112.19.2, wall hung with side shields and concealed carrier.
1. Consumption Volume: 1.0 gal (3.7 L) per flush, maximum.
  2. Flush Valve: Exposed (top spud).
  3. Flush Operation: Sensor operated.
  4. Trapway Outlet: Integral.
  5. Supply Size: 3/4 inch (19 mm).
  6. Outlet Size and Location: 2 inches (50 mm), bottom side.
- B. Flush Valves:
1. Manual Operated:
    - a. Type: ASME A112.18.1 or ASME A112.19.5; diaphragm type, complete with vacuum breaker stops, and accessories.
    - b. Supplied Volume Capacity: 1.5 gal (5.7 L) per flush.
  2. Sensor-Operated:
    - a. Type: ASME A112.19.5; chloramine-resistant, clog-resistant dual-seat diaphragm valve with vacuum breaker stops and accessories.
    - b. Mechanism: Solenoid-operated piston or electronic motor-actuated operator with low-voltage powered infrared sensor, and mechanical override or override push button.
    - c. Supplied Volume Capacity: 1.2 gal (4.5 L) per flush.
    - d. Metering: Provide wireless communications into monitoring and logging application.
  3. Concealed Type: Rough brass, exposed parts chrome-plated, wall escutcheon, wheel handle stop.
  4. Exposed Type: Chrome-plated, escutcheon, integral screwdriver stop.
  5. Metering Type: Easily accessible adjustment nut.
- C. Urinal Carriers:
1. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded fixture studs for fixture hanger, bearing studs.

**2.05 STALL URINALS**

- A. ASME A112.19.2; vitreous china slope front stall urinal with integral flushing rim, removable stainless steel strainer 3/4 inch (19 mm) top spud.
- B. Trapway Outlet: Integral.
- C. Flush Valves:
  - 1. Exposed: ASME A112.18.1; chrome plated, diaphragm type with oscillating handle, escutcheon, integral screwdriver stop, vacuum breaker; maximum 1.0 gal (3.7 L) flush volume.
  - 2. Concealed: ASME A112.18.1; rough brass, diaphragm type with exposed chrome plated push button and escutcheon, wheel handle stop and vacuum breaker; maximum 1.0 gal (3.7 L) flush volume.
  - 3. Sensor Operated: ASME A112.18.1; concealed rough brass, diaphragm type with low voltage operated solenoid operator, infrared sensor and override button in chrome plated plate, wheel handle stop and vacuum breaker; maximum 1.0 gal (3.7 L) flush volume.
- D. Exposed Flush Valve: ASME A112.18.1; exposed chrome-plated, diaphragm type with oscillating handle, escutcheon, integral screwdriver stop, vacuum breaker; maximum 1.0 gallon (3.7 liters) flush volume.
- E. Concealed Flush Valve: ASME A112.18.1; concealed rough brass, diaphragm type with exposed chrome-plated push button and escutcheon, wheel handle stop and vacuum breaker; maximum 1.0 gallon (3.7 liters) flush volume.
- F. Sensor Operated Flush Valve: ASME A112.18.1; concealed rough brass, diaphragm type with low voltage operated solenoid operator, infrared sensor and over-ride button in chrome-plated plate, wheel handle stop and vacuum breaker; maximum 1.0 gallon (3.7 liters) flush volume.
- G. Stall Urinal Carriers:
  - 1. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded fixture studs for fixture hanger, bearing studs.

**2.06 LAVATORIES**

- A. Wall-Hung Basin:
  - 1. Porcelain-Enameled Cast Iron: ASME A112.19.1; white, rectangular basin with splash lip, front overflow, soap depression, and hanger. Size as indicated on drawings with 4 inch (100 mm) centerset spacing.
  - 2. Vitreous China: ASME A112.19.2; white rectangular basin with splash lip, front overflow, soap depression, and hanger. Size as indicated on drawings with 4 inch (100 mm) centerset spacing.
  - 3. Vitreous China, Grade A: ASME A112.19.2; white rectangular commercial-grade sink with predrilled holes, rear-center drain, front overflow, and hanger. Size as indicated on drawings with 4 inch (100 mm) centerset spacing.
  - 4. Carrier:
    - a. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded studs for fixture hanger, bearing plate and studs.
- B. Drop-In Basin:
  - 1. Porcelain on Steel: ASME A112.19.4M; white, front overflow, soap depression, seal of putty, caulking, or concealed vinyl gasket. Size as indicated on drawings with 4 inch (100 mm) centerset spacing.

2. Vitreous China: ASME A112.19.2; self-rimming, white, square shape, front overflow, soap depression, seal of putty, calking, or concealed vinyl gasket, and white finish. Size as indicated on drawings with 4 inch (100 mm) centerset spacing.
- C. Under-Mount Basin:
1. Vitreous China: ASME A112.19.2; white, oval shape, front overflow, seal of putty, calking, or concealed vinyl gasket, and white finish. Size as indicated on drawings.
  2. Vitreous China, Grade A: ASME A112.19.2; white, oval shape, front overflow, and white finish. Size 18 by 12 inch (457.2 by 304.8 mm).
- D. Pedestal Basin:
1. Vitreous China: ASME A112.19.2; white, round shape, integral rear splash rim, front overflow, and steel hanger. Size as indicated on drawings with 8 inch (200 mm) centerset spacing.
  2. Fireclay: ASME A112.19.2; white, oval shape, integral rear splash rim, front overflow, and steel hanger. Size as indicated on drawings with 8 inch (200 mm) centerset spacing.
- E. Supply Faucet:
1. Supply Faucet: ASME A112.18.1; chrome plated combination supply fitting with pop-up waste, water economy aerator with maximum flow of 2.2 gpm (8.3 Lpm), indexed handles.
  2. Single Lever Handle, Supply Faucet: ASME A112.18.1; deck-mount, ceramic cartridge disc valve, and maximum flow of 1.2 gpm (4.5 Lpm).
- F. Supply Faucet: ASME A112.18.1; chrome-plated combination supply fitting with pop-up waste, water economy aerator with maximum flow of 2.2 gallons per minute (8.3 liters per minute), indexed handles.
- G. Metered Faucet: ASME A112.18.1; chrome-plated metered mixing faucet with low voltage operated solenoid operator and infrared sensor, aerator and cover plate, open grid strainer.
1. ASME A112.18.1; chrome plated metered mixing faucet with low voltage operated solenoid operator and infrared sensor, aerator and cover plate, open grid strainer.
- H. Sensor Operated Faucet: Cast brass, chrome-plated, wall mounted with sensor located on neck of spout.
1. Spout Style: Standard.
  2. Power Supply:
    - a. Wired: 6 VDC, field-wired into dedicated or common power supply.
    - b. Wireless:
      - 1) Battery: Replaceable alkaline or lithium type with 200,000 cycles, minimum.
      - 2) Light Cell: Photovoltaic or infra-red cell that transforms both sunlight and artificial light into electrical energy for use and battery charging.
      - 3) Low Battery Warning: Provide red or yellow colored indicator to light periodically at 30 days of remaining capacity and continuously 2 weeks prior to get fully discharged.
  3. Mixing Valve: None, single line for tempered water.
  4. Water Supply: 3/8 inch (9 mm) compression connections.
  5. Aerator: Vandal resistant, 0.5 gpm (1.89 Lpm), laminar flow device.
  6. Finish: Polished chrome.
  7. Lead Content: Extra low; maximum 0.25 percent by weighed average.
- I. Thermostatic Mixing Valve:
1. ASSE 1070 listed with combination stop, strainer, and check valves, and flexible stainless steel connectors.

2. Braided hot and cold water supply lines.
  3. Chrome plated 17 gauge, 0.0538 inch (1.37 mm) brass P-trap with clean-out plug and arm with escutcheon.
- J. Accessories:
1. Chrome-plated 17 gauge, 0.0538 inch (1.37 mm) brass P-trap with clean-out plug and arm with escutcheon.
- K. Lavatory Carrier:
1. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded studs for fixture hanger, bearing plate and studs.
- L. Accessories:
1. Offset waste with perforated open strainer.
  2. Combination stop and strainer.
  3. Soap Dispenser: Manual or sensor-based.
  4. Wheel handle stops.
  5. Rigid supplies.
- 2.07 WALL-HUNG, SOLID SURFACE, MULTI-STATION LAVATORY UNITS
- A. Description: Rectilinear, level-surface deck, seamless and integral elongated basin, with stainless steel enclosed pedestal cabinet.
  - B. Deck and Bowl Material: Fabricate from molded engineered stone material consisting of natural quartz, granite, and other minerals in a matrix of thermoset acrylic modified bio-based polyester resin and meeting requirements of IAPMO Z124.
  - C. Surface Burning Characteristics: Smoke developed index less than 450, and flame spread index less than 25, Class A, when tested in accordance with ASTM E84.
  - D. Number of Wash Stations: Two.
  - E. Unit size: 120 inches long x 24 inches
  - F. Color: As selected by Architect from manufacturer's full line.
  - G. Faucet Drilling: 4 inch (100 mm) centerset drilling.
  - H. Access Panel: Stainless steel.
  - I. Support Frame: Wall mounted, heavy gauge, stainless steel.
- 2.08 UNDER-LAVATORY PIPE SUPPLY COVERS
- A. General:
1. Insulate exposed drainage piping including hot, cold and tempered water supplies under lavatories or sinks per ADA Standards.
  2. Construction: 1/8 inch (3.2 mm) PVC with antimicrobial, antifungal and UV resistant properties.
    - a. Comply with ASME A112.18.9 for covers on accessible lavatory piping.
    - b. Comply with ICC A117.1.
    - c. Thermal Resistance: R value of 0.504 or lower when tested by ASTM C177.
    - d. Thermal Conductivity: K value of 0.358 or density of 21.61 pcf per ASTM C518.
    - e. Microbial and Fungal Resistance for Interior and Exterior: Comply with ASTM G21.
  3. Fasteners: Reusable, snap-locking fasteners with no sharp or abrasive external surfaces. No cable ties allowed.

### **PART 3 - EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- B. Verify that electric power is available and of the correct characteristics.
- C. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

#### **3.02 PREPARATION**

- A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

#### **3.03 INSTALLATION**

- A. Install each fixture with trap, easily removable for servicing and cleaning.
- B. Provide chrome-plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
- C. Install components level and plumb.
- D. Install and secure fixtures in place with wall supports and bolts.
- E. Solidly attach water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.

#### **3.04 ADJUSTING**

- A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

#### **3.05 CLEANING**

- A. Clean plumbing fixtures and equipment.

#### **3.06 PROTECTION**

- A. Protect installed products from damage due to subsequent construction operations.
- B. Do not permit use of fixtures by construction personnel.
- C. Repair or replace damaged products before Date of Substantial Completion.

#### **3.07 SCHEDULES**

- A. Fixture Heights: Install fixtures to heights above finished floor as indicated.
  - 1. Water Closet:
    - a. Standard: 15 inches (380 mm) to top of bowl rim.
    - b. Accessible: 18 inches (455 mm) to top of seat.
  - 2. Water Closet Flush Valves:
    - a. Standard: 11 inches (280 mm) min. above bowl rim.
    - b. Recessed: 10 inches (255 mm) min. above bowl rim.
  - 3. Urinal:
    - a. Standard: 22 inches (560 mm) to top of bowl rim.
    - b. Accessible: 17 inches (430 mm) to top of bowl rim.
  - 4. Lavatory:
    - a. Standard: 31 inches (785 mm) to top of basin rim.
    - b. Accessible: 34 inches (865 mm) to top of basin rim.
- B. Fixture Rough-In
  - 1. Water Closet (Flush Valve Type):

- a. Cold Water: 1 Inch (25 mm).
- b. Waste: 4 Inch (100 mm).
- c. Vent: 2 Inch (50 mm).
2. Urinal (Flush Valve Type):
  - a. Cold Water: 3/4 Inch (20 mm).
  - b. Waste: 2 Inch (50 mm).
  - c. Vent: 1-1/2 Inch (40 mm).
3. Urinal (Tank Type):
  - a. Cold Water: 1/2 Inch (15 mm).
  - b. Waste: 2 Inch (50 mm).
  - c. Vent: 1-1/2 Inch (40 mm).
4. Lavatory:
  - a. Hot Water: 1/2 Inch (15 mm).
  - b. Cold Water: 1/2 Inch (15 mm).
  - c. Waste: 1-1/2 Inch (40 mm).
  - d. Vent: 1-1/4 Inch (32 mm).

END OF SECTION

**SECTION 26 05 19**

**LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**

**PART 1 - GENERAL**

1.01 SECTION INCLUDES

- A. Single conductor building wire.
- B. Metal-clad cable.
- C. Wiring connectors.
- D. Electrical tape.
- E. Oxide inhibiting compound.
- F. Wire pulling lubricant.
- G. Cable ties.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 13 - Firestopping.

1.03 REFERENCE STANDARDS

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire 2013 (Reapproved 2018).
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft 2011 (Reapproved 2017).
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes 2010, with Editorial Revision (2020).
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation 2004 (Reapproved 2020).
- E. ASTM B800 - Standard Specification for 8000 Series Aluminum Alloy Wire for Electrical Purposes - Annealed and Intermediate Tempers 2005 (Reapproved 2021).
- F. ASTM B801 - Standard Specification for Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy for Subsequent Covering or Insulation 2018.
- G. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape 2017.
- H. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- I. NECA 104 - Standard for Installing Aluminum Building Wire and Cable 2012.
- J. NECA 120 - Standard for Installing Armored Cable (AC) and Type Metal-Clad (MC) Cable 2018.
- K. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy 2021.
- L. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- M. UL 44 - Thermoset-Insulated Wires and Cables Current Edition, Including All Revisions.
- N. UL 83 - Thermoplastic-Insulated Wires and Cables Current Edition, Including All Revisions.



- O. UL 267 - Outline of Investigation for Wire-Pulling Compounds Current Edition, Including All Revisions.
- P. UL 486A-486B - Wire Connectors Current Edition, Including All Revisions.
- Q. UL 486C - Splicing Wire Connectors Current Edition, Including All Revisions.
- R. UL 486D - Sealed Wire Connector Systems Current Edition, Including All Revisions.
- S. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape Current Edition, Including All Revisions.
- T. UL 1569 - Metal-Clad Cables Current Edition, Including All Revisions.

#### 1.04 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

## **PART 2 - PRODUCTS**

### 2.01 CONDUCTOR AND CABLE APPLICATIONS

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
- C. Nonmetallic-sheathed cable is not permitted.
- D. Underground feeder and branch-circuit cable is not permitted.
- E. Service entrance cable is not permitted.
- F. Armored cable is not permitted.
- G. Metal-clad cable is permitted only as follows:
  - 1. Where not otherwise restricted, may be used:
    - a. Where concealed above accessible ceilings for final connections from junction boxes to luminaires.
      - 1) Maximum Length: 6 feet (1.8 m).
    - b. Where concealed in hollow stud walls, above accessible ceilings, and under raised floors for branch circuits up to 20 A.
      - 1) Exception: Provide single conductor building wire in raceway for circuit homerun from first outlet to panelboard.
  - 2. In addition to other applicable restrictions, may not be used:
    - a. Where not approved for use by the authority having jurisdiction.

- b. Where exposed to view.
- c. Where exposed to damage.
- d. For damp, wet, or corrosive locations.

H. Manufactured wiring systems are not permitted.

## 2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductor Material:
  - 1. Provide copper conductors except where aluminum conductors are specifically indicated or permitted for substitution. Conductor sizes indicated are based on copper unless specifically indicated as aluminum. Conductors designated with the abbreviation "AL" indicate aluminum.
    - a. Where aluminum conductors are substituted for copper, comply with the following:
      - 1) Size aluminum conductors to provide, when compared to copper sizes indicated, equivalent or greater ampacity and equivalent or less voltage drop.
      - 2) Increase size of raceways, boxes, wiring gutters, enclosures, etc. as required to accommodate aluminum conductors.
    - 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
    - 3. Tinned Copper Conductors: Comply with ASTM B33.
    - 4. Aluminum Conductors (only where specifically indicated or permitted for substitution): AA-8000 series aluminum alloy conductors recognized by ASTM B800 and compact stranded in accordance with ASTM B801 unless otherwise indicated.
  - H. Conductor Color Coding:
    - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
    - 2. Color Coding Method: Integrally colored insulation.
    - 3. Color Code:
      - a. 208Y/120 V, 3 Phase, 4 Wire System:
        - 1) Phase A: Black.
        - 2) Phase B: Red.
        - 3) Phase C: Blue.
        - 4) Neutral/Grounded: White.
      - b. Equipment Ground, All Systems: Green.

## 2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Manufacturers:
  - 1. Copper Building Wire:
    - a. Cerro Wire LLC: [www.cerrowire.com/#sle](http://www.cerrowire.com/#sle).
    - b. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).

- c. General Cable Technologies Corporation; \_\_\_\_\_: [www.generalcable.com/#sle](http://www.generalcable.com/#sle).
  - d. Service Wire Co: [www.servicewire.com/#sle](http://www.servicewire.com/#sle).
  - e. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
- B. Description: Single conductor insulated wire.
- C. Conductor Stranding:
- 1. Feeders and Branch Circuits:
    - a. Size 10 AWG and Smaller: Solid.
    - b. Size 8 AWG and Larger: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation:
- 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
    - a. Size 4 AWG and Larger: Type XHHW-2.
- 2.04 METAL-CLAD CABLE
- A. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.
- B. Conductor Stranding:
- 1. Size 10 AWG and Smaller: Solid.
  - 2. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.
- E. Grounding: Full-size integral equipment grounding conductor.
- F. Armor: Steel, interlocked tape.
- 2.05 WIRING CONNECTORS
- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Wiring Connectors for Splices and Taps:
- 1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
  - 2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.
  - 3. Connectors for Aluminum Conductors: Use compression connectors.
- C. Wiring Connectors for Terminations:
- 1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
  - 2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only compression connectors are specified.
  - 3. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
  - 4. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors or compression connectors where connectors are required.
  - 5. Stranded Conductors Size 10 AWG and Smaller: Use crimped terminals for connections to terminal screws.

- D. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.
- E. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.
- F. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F (105 degrees C) for standard applications and 302 degrees F (150 degrees C) for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
- G. Mechanical Connectors: Provide bolted type or set-screw type.
- H. Compression Connectors: Provide circumferential type or hex type crimp configuration.
- I. Crimped Terminals: Nylon-insulated, with insulation grip and terminal configuration suitable for connection to be made.

## 2.06 ACCESSORIES

- A. Electrical Tape:
  - 1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F (105 degrees C).
  - 2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F (-18 degrees C) and suitable for continuous temperature environment up to 221 degrees F (105 degrees C).
- B. Oxide Inhibiting Compound: Listed; suitable for use with the conductors or cables to be installed.
- C. Wire Pulling Lubricant:
  - 1. Manufacturers:
    - a. 3M: [www.3m.com/#sle](http://www.3m.com/#sle).
    - b. American Polywater Corporation: [www.polywater.com/#sle](http://www.polywater.com/#sle).
    - c. Ideal Industries, Inc: [www.idealindustries.com/#sle](http://www.idealindustries.com/#sle).
    - d. Substitutions: See Section 01 60 00 - Product Requirements.
  - 2. Listed and labeled as complying with UL 267.
  - 3. Suitable for use with conductors/cables and associated insulation/jackets to be installed.
  - 4. Suitable for use at installation temperature.
- D. Cable Ties: Material and tensile strength rating suitable for application.

## **PART 3 - EXECUTION**

### 3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that field measurements are as indicated.
- E. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 PREPARATION

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

### 3.03 INSTALLATION

- A. Circuiting Requirements:
  - 1. Unless dimensioned, circuit routing indicated is diagrammatic.
  - 2. When circuit destination is indicated without specific routing, determine exact routing required.
  - 3. Arrange circuiting to minimize splices.
  - 4. Include circuit lengths required to install connected devices within 10 ft (3.0 m) of location indicated.
  - 5. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
  - 6. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is permitted, under the following conditions:
    - a. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
    - b. Increase size of conductors as required to account for ampacity derating.
  - 7. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Install aluminum conductors in accordance with NECA 104.
- E. Install metal-clad cable (Type MC) in accordance with NECA 120.
- F. Installation in Raceway:
  - 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
  - 2. Pull all conductors and cables together into raceway at same time.
  - 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
  - 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- G. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- H. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
- I. Terminate cables using suitable fittings.
  - 1. Metal-Clad Cable (Type MC):
    - a. Use listed fittings.
    - b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.
- J. Install conductors with a minimum of 12 inches (300 mm) of slack at each outlet.
- K. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- L. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.

- M. Make wiring connections using specified wiring connectors.
  - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
  - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
  - 3. Do not remove conductor strands to facilitate insertion into connector.
  - 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminants. Do not use wire brush on plated connector surfaces.
  - 5. Connections for Aluminum Conductors: Fill connectors with oxide inhibiting compound where not pre-filled by manufacturer.
  - 6. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
  - 7. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- N. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
- O. Insulate ends of spare conductors using vinyl insulating electrical tape.
- P. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 13.
- Q. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

END OF SECTION

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SECTION 26 05 26

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 467 - Grounding and Bonding Equipment Current Edition, Including All Revisions.

PART 2 - PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
- B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- E. Bonding and Equipment Grounding:
  - 1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
  - 2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
  - 3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
  - 4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.



5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

## 2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
  1. Provide products listed, classified, and labeled as suitable for the purpose intended.
  2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 05 26:
  1. Use insulated copper conductors unless otherwise indicated.
    - a. Exceptions:
      - 1) Use bare copper conductors where installed underground in direct contact with earth.
      - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
  1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
  2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
  3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

## **PART 3 - EXECUTION**

### 3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Make grounding and bonding connections using specified connectors.
  1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
  2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
  3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
  4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
  5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

D. Identify grounding and bonding system components in accordance with Section 26 05 53.

END OF SECTION

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**SECTION 26 05 29**

**HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 31 10 – Concrete Construction: Concrete equipment pads.
- B. Section 26 05 33.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- C. Section 26 05 33.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.
- D. Section 26 51 00 - Interior Lighting: Additional support and attachment requirements for interior luminaires.

**1.03 REFERENCE STANDARDS**

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2019.
- D. MFMA-4 - Metal Framing Standards Publication 2004.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
  - 2. Coordinate work to provide additional framing and materials required for installation.
  - 3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
  - 4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.
  - 5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
  - 1. Do not install products on or provide attachment to concrete surfaces until concrete has cured.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

## PART 2 - PRODUCTS

### 2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
1. Comply with the following. Where requirements differ, comply with most stringent.
    - a. NFPA 70.
    - b. Applicable building code.
    - c. Requirements of authorities having jurisdiction.
  2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of electrical work.
  3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
  4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for load to be supported with minimum safety factor of fifty percent. Include consideration for vibration, equipment operation, and shock loads where applicable.
  5. Do not use products for applications other than as permitted by NFPA 70 and product listing.
  6. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
  7. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
    - a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
    - b. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
    - c. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps and clamps suitable for conduit or cable to be supported.
1. Manufacturers:
    - a. ABB: [www.electrification.us.abb.com/#sle](http://www.electrification.us.abb.com/#sle).
    - b. Eaton Corporation: [www.eaton.com/#sle](http://www.eaton.com/#sle).
    - c. Emerson Electric Co; O-Z/Gedney: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - d. HoldRite, a brand of Reliance Worldwide Corporation: [www.holdrite.com/#sle](http://www.holdrite.com/#sle).
    - e. nVent; Caddy: [www.nvent.com/#sle](http://www.nvent.com/#sle).
    - f. Substitutions: See Section 01 60 00 - Product Requirements.
  2. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
  3. Conduit Clamps: Bolted type unless otherwise indicated.
- C. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.
- D. Metal Channel/Strut Framing Systems:
1. Manufacturers:
    - a. ABB: [www.electrification.us.abb.com/#sle](http://www.electrification.us.abb.com/#sle).
    - b. Atkore International Inc; Unistrut: [www.unistrut.us/#sle](http://www.unistrut.us/#sle).
    - c. Custom Strut and Roll Forming, LLC: [www.customstrut.com/#sle](http://www.customstrut.com/#sle).
    - d. Eaton Corporation: [www.eaton.com/#sle](http://www.eaton.com/#sle).
    - e. Elgen Manufacturing Company, Inc; [www.elgenmfg.com/#sle](http://www.elgenmfg.com/#sle).
    - f. Substitutions: See Section 01 60 00 - Product Requirements.
  2. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.

3. Comply with MFMA-4.
- E. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
  1. Minimum Size, Unless Otherwise Indicated or Required:
    - a. Single Conduit up to 1-inch (27 mm) Trade Size: 1/4-inch (6 mm) diameter.
    - b. Single Conduit Larger than 1-inch (27 mm) Trade Size: 3/8-inch (10 mm) diameter.
    - c. Trapeze Support for Multiple Conduits: 3/8-inch (10 mm) diameter.
    - d. Outlet Boxes: 1/4-inch (6 mm) diameter.
    - e. Luminaires: 1/4-inch (6 mm) diameter.
- F. Anchors and Fasteners:
  1. Manufacturers - Mechanical Anchors:
    - a. Dewalt: [anchors.dewalt.com/#sle](http://anchors.dewalt.com/#sle).
    - b. Hilti, Inc: [www.hilti.com/#sle](http://www.hilti.com/#sle).
    - c. ITW Red Head, a division of Illinois Tool Works, Inc: [www.itwredhead.com/#sle](http://www.itwredhead.com/#sle).
    - d. Simpson Strong-Tie Company Inc: [www.strongtie.com/#sle](http://www.strongtie.com/#sle).
    - e. Substitutions: See Section 01 60 00 - Product Requirements.
  2. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.

### **PART 3 -EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

#### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install hangers and supports in accordance with NECA 1.
- C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
- E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
- F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- G. Equipment Support and Attachment:
  1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
  2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
  3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
  4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- H. Conduit Support and Attachment: See Section 26 05 33.13 for additional requirements.

- I. Box Support and Attachment: See Section 26 05 33.16 for additional requirements.
- J. Interior Luminaire Support and Attachment: See Section 26 51 00 for additional requirements.
- K. Secure fasteners in accordance with manufacturer's recommended torque settings.
- L. Remove temporary supports.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 43 00 - Quality Requirements for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION

**SECTION 26 05 33.13**

**CONDUIT FOR ELECTRICAL SYSTEMS**

**PART 1 - GENERAL**

1.01 SECTION INCLUDES

- A. Galvanized steel rigid metal conduit (RMC).
- B. Stainless steel rigid metal conduit (RMC).
- C. Flexible metal conduit (FMC).
- D. Galvanized steel electrical metallic tubing (EMT).
- E. Stainless steel electrical metallic tubing (EMT).
- F. Aluminum electrical metallic tubing (EMT).

1.02 RELATED REQUIREMENTS

- A. Section 07 84 13 - Firestopping.
- B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- C. Section 26 05 29 - Hangers and Supports for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC) 2020.
- B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S) 2020.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- D. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT) 2020.
- E. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 1 - Flexible Metal Conduit Current Edition, Including All Revisions.
- H. UL 6 - Electrical Rigid Metal Conduit-Steel Current Edition, Including All Revisions.
- I. UL 6A - Electrical Rigid Metal Conduit-Aluminum, Red Brass, and Stainless Steel Current Edition, Including All Revisions.
- J. UL 514B - Conduit, Tubing, and Cable Fittings Current Edition, Including All Revisions.
- K. UL 797 - Electrical Metallic Tubing-Steel Current Edition, Including All Revisions.
- L. UL 797A - Electrical Metallic Tubing - Aluminum and Stainless Steel Current Edition, Including All Revisions.
- M. UL 2419 - Outline of Investigation for Electrically Conductive Corrosion Resistant Compounds Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Coordinate minimum sizes of conduits with actual type and quantity of conductors to be installed, including adjustments for conductor sizes increased for voltage drop.



2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment, and other potential conflicts.
  3. Verify exact conduit termination locations required for boxes, enclosures, and equipment.
  4. Coordinate work to provide roof penetrations that preserve integrity of roofing system and do not void roof warranty.
  5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
1. Do not begin installation of conductors and cables until installation of conduit between termination points is complete.

## **PART 2 - PRODUCTS**

### 2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, manufacturer's instructions, and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one listed application applies, comply with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.
- C. Concealed Within Masonry Walls: Use galvanized steel rigid metal conduit (RMC), stainless steel rigid metal conduit (RMC), galvanized steel electrical metallic tubing (EMT), or stainless steel electrical metallic tubing (EMT).
- D. Concealed Within Hollow Stud Walls: Use galvanized steel rigid metal conduit (RMC), stainless steel rigid metal conduit (RMC), galvanized steel electrical metallic tubing (EMT), stainless steel electrical metallic tubing (EMT), or aluminum electrical metallic tubing (EMT).
- E. Concealed Above Accessible Ceilings: Use galvanized steel rigid metal conduit (RMC), stainless steel rigid metal conduit (RMC), galvanized steel electrical metallic tubing (EMT), stainless steel electrical metallic tubing (EMT), or aluminum electrical metallic tubing (EMT).
- F. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit (RMC), stainless steel rigid metal conduit (RMC), galvanized steel electrical metallic tubing (EMT), or stainless steel electrical metallic tubing (EMT).
- G. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC), stainless steel rigid metal conduit (RMC), galvanized steel electrical metallic tubing (EMT), stainless steel electrical metallic tubing (EMT), or aluminum electrical metallic tubing (EMT).
- H. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC) or stainless steel rigid metal conduit (RMC).
  - a. Where exposed below 8 feet (2.4 m), except within electrical and communication rooms or closets.
- I. Flexible Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit (FMC).
  1. Maximum Length: 6 feet (1.8 m).
- J. Fished in Existing Walls, Where Necessary: Use flexible metal conduit (FMC), galvanized steel electrical metallic tubing (EMT), or stainless steel electrical metallic tubing (EMT).

## 2.02 CONDUIT - GENERAL REQUIREMENTS

- A. Comply with NFPA 70.
- B. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling mandrel through them.
  - 1. Where permitted, existing conduits to be reused may be used as sole equipment grounding conductor only when continuity of conduit pathway, including associated boxes and fittings, is verified; see Section 26 05 26.
- C. Provide conduit, fittings, supports, and accessories required for complete raceway system.
- D. Provide products listed, classified, and labeled as suitable for purpose intended.
- E. Minimum Conduit Size, Unless Otherwise Indicated:
  - 1. Branch Circuits: 3/4-inch (21 mm) trade size.
- F. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

## 2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
  - 1. Allied Tube & Conduit, a division of Atkore International: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).
  - 2. Nucor Tubular Products: [www.nucortubular.com/#sle](http://www.nucortubular.com/#sle).
  - 3. Rymco USA: [www.rymcousa.com/#sle](http://www.rymcousa.com/#sle).
  - 4. Western Tube, a division of Zekelman Industries: [www.westerntube.com/#sle](http://www.westerntube.com/#sle).
  - 5. Wheatland Tube, a division of Zekelman Industries: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
  - 6. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- C. Fittings:
  - 1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6.
  - 2. Material: Use steel or malleable iron.
    - a. Do not use die cast zinc fittings.
  - 3. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

## 2.04 STAINLESS STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
  - 1. Calbrite, a division of Atkore International: [www.calbrite.com/#sle](http://www.calbrite.com/#sle).
  - 2. Gibson Stainless & Specialty Inc: [www.gibsonstainless.com/#sle](http://www.gibsonstainless.com/#sle).
  - 3. Patriot Industries, a division of Patriot Aluminum Products LLC: [www.patriotsas.com/#sle](http://www.patriotsas.com/#sle).
  - 4. Rymco USA: [www.rymcousa.com/#sle](http://www.rymcousa.com/#sle).
- B. Description: NFPA 70, Type RMC stainless steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6A.
  - 1. Material: Type 304 or 316 stainless steel.
- C. Fittings:
  - 1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6A.

2. Material: Use stainless steel with corrosion resistance equivalent to conduit.
3. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

#### 2.05 FLEXIBLE METAL CONDUIT (FMC)

- A. Description: NFPA 70, Type FMC standard-wall steel flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems.
- B. Fittings:
  1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  2. Material: Use steel or malleable iron.
    - a. Do not use die cast zinc fittings.

#### 2.06 GALVANIZED STEEL ELECTRICAL METALLIC TUBING (EMT)

- A. Manufacturers:
  1. Allied Tube & Conduit, a division of Atkore International: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).
  2. Nucor Tubular Products: [www.nucortubular/#sle](http://www.nucortubular/#sle).
  3. Rymco USA: [www.rymcousa.com/#sle](http://www.rymcousa.com/#sle).
  4. Western Tube, a division of Zekelman Industries: [www.westerntube.com/#sle](http://www.westerntube.com/#sle).
  5. Wheatland Tube, a division of Zekelman Industries: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
  6. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Description: NFPA 70, Type EMT galvanized steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- C. Fittings:
  1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  2. Material: Use steel or malleable iron.
    - a. Do not use die cast zinc fittings.
  3. Connectors and Couplings: Use compression/gland or set-screw type.
    - a. Do not use indenter type connectors and couplings.

#### 2.07 STAINLESS STEEL ELECTRICAL METALLIC TUBING (EMT)

- A. Description: NFPA 70, Type EMT stainless steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797A.
  1. Material: Type 304 or 316 stainless steel.
- B. Fittings:
  1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  2. Connectors and Couplings: Use compression/gland or set-screw type.

#### 2.08 ALUMINUM ELECTRICAL METALLIC TUBING (EMT)

- A. Description: NFPA 70, Type EMT aluminum electrical metallic tubing listed and labeled as complying with UL 797A.
- B. Fittings:
  1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B; listed for use with aluminum EMT.
  2. Material: Use aluminum.
    - a. Do not use die cast zinc fittings.

3. Connectors and Couplings: Use compression/gland or set-screw type.
  - a. Do not use indenter type connectors and couplings.

#### 2.09 ACCESSORIES

- A. Conduit Joint Compound: Corrosion-resistant, electrically conductive compound listed as complying with UL 2419; suitable for use with conduit to be installed.
- B. Pull Strings: Use nylon or polyester tape with average breaking strength of not less than 1,250 lbf (5.6 kN).
- C. Firestop Sleeves: Listed; provide as required to preserve fire resistance rating of building elements.
  1. Products:
    - a. HoldRite, a brand of Reliance Worldwide Corporation; HydroFlame Pro Series/HydroFlame Custom Built: [www.holdrite.com/#sle](http://www.holdrite.com/#sle).
    - b. Substitutions: See Section 01 60 00 - Product Requirements.

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.

#### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in accordance with NECA 1.
- C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
- D. Conduit Routing:
  1. When conduit destination is indicated without specific routing, determine exact routing required.
  2. Conceal conduits unless specifically indicated to be exposed.
  3. Conduits in the following areas may be exposed, unless otherwise indicated:
    - a. Electrical rooms.
  4. Unless otherwise approved, do not route exposed conduits:
    - a. Across floors.
    - b. Across roofs.
    - c. Across top of parapet walls.
    - d. Across building exterior surfaces.
  5. Arrange conduit to maintain adequate headroom, clearances, and access.
  6. Arrange conduit to provide no more than equivalent of four 90-degree bends between pull points.
  7. Arrange conduit to provide no more than 150 feet (46 m) between pull points.
  8. Route conduits above water and drain piping where possible.
  9. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
  10. Maintain minimum clearance of 6 inches (150 mm) between conduits and piping for other systems.

11. Maintain minimum clearance of 12 inches (300 mm) between conduits and hot surfaces. This includes, but is not limited to:
  - a. Heaters.
  - b. Hot water piping.
  - c. Flues.
- E. Conduit Support:
  1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction; see Section 260529.
  2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
  3. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
  4. Use metal channel/strut with accessory conduit clamps to support multiple parallel surface-mounted conduits.
  5. Use conduit clamp to support single conduit from beam clamp or threaded rod.
  6. Use trapeze hangers assembled from threaded rods and metal channel/strut with accessory conduit clamps to support multiple parallel suspended conduits.
  7. Use of spring steel conduit clips for support of conduits is not permitted.
  8. Use of wire for support of conduits is not permitted.
  9. Where conduit support intervals specified in NFPA 70 and NECA standards differ, comply with most stringent requirements.
- F. Connections and Terminations:
  1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
  2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
  3. Use suitable adapters where required to transition from one type of conduit to another.
  4. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
  5. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect conductors.
  6. Secure joints and connections to provide mechanical strength and electrical continuity.
- G. Penetrations:
  1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
  2. Make penetrations perpendicular to surfaces unless otherwise indicated.
  3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
  4. Conceal bends for conduit risers emerging above ground.
  5. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
  6. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty.
  7. Install firestopping to preserve fire resistance rating of partitions and other elements; see Section 07 84 13.

- H. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
  - 1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
  - 2. Where conduits are subject to earth movement by settlement or frost.
- I. Conduit Sealing:
  - 1. Use foam conduit sealant to prevent entry of moisture and gases. This includes, but is not limited to:
    - a. Where conduits enter building from outside.
    - b. Where service conduits enter building from underground distribution system.
    - c. Where conduits enter building from underground.
    - d. Where conduits may transport moisture to contact live parts.
  - 2. Where conduits cross barriers between areas of potential substantial temperature differential, use foam conduit sealant at accessible point near penetration to prevent condensation. This includes, but is not limited to:
    - a. Where conduits pass from outdoors into conditioned interior spaces.
    - b. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- J. Provide grounding and bonding; see Section 26 05 26.

### 3.03 FIELD QUALITY CONTROL

- A. See Section 01 43 00 - Quality Requirements for additional requirements.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Correct deficiencies and replace damaged or defective conduits.

### 3.04 CLEANING

- A. Clean interior of conduits to remove moisture and foreign matter.

### 3.05 PROTECTION

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION

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**SECTION 26 05 33.16**  
**BOXES FOR ELECTRICAL SYSTEMS**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Outlet and device boxes up to 100 cubic inches (1,650 cu cm), including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches (1,650 cu cm).

**1.02 RELATED REQUIREMENTS**

- A. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- B. Section 26 05 33.13 - Conduit for Electrical Systems:
  - 1. Conduit bodies and other fittings.
  - 2. Additional requirements for locating boxes to limit conduit length and/or number of bends between pulling points.
- C. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.
- D. Section 26 27 26 - Wiring Devices:
  - 1. Wall plates.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.
- D. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.
- E. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports 2013 (Reaffirmed 2020).
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations Current Edition, Including All Revisions.
- H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations Current Edition, Including All Revisions.
- I. UL 508A - Industrial Control Panels Current Edition, Including All Revisions.
- J. UL 514A - Metallic Outlet Boxes Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.



2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
6. Coordinate the work with other trades to preserve insulation integrity.
7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
8. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

#### 1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

### **PART 2 - PRODUCTS**

#### 2.01 BOXES

- A. General Requirements:
  1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
  2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
  3. Provide products listed, classified, and labeled as suitable for the purpose intended.
  4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
  5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches (1,650 cu cm), Including Those Used as Junction and Pull Boxes:
  1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
  2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
  3. Use suitable concrete type boxes where flush-mounted in concrete.
  4. Use suitable masonry type boxes where flush-mounted in masonry walls.
  5. Use raised covers suitable for the type of wall construction and device configuration where required.
  6. Use shallow boxes where required by the type of wall construction.

7. Do not use "through-wall" boxes designed for access from both sides of wall.
  8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
  9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
  10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
  11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
  12. Wall Plates: Comply with Section 26 27 26.
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
  2. NEMA 250 Environment Type, Unless Otherwise Indicated:
    - a. Indoor Clean, Dry Locations: Type 1, painted steel.
    - b. Outdoor Locations: Type 3R, painted steel.
  3. Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
    - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.

### **PART 3 - EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

#### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Box Locations:
  1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 31 13 as required where approved by the Architect.
  2. Locate boxes so that wall plates do not span different building finishes.
  3. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.
    - a. Do not install flush-mounted boxes on opposite sides of walls back-to-back; provide minimum 24 inches (610 mm) separation where wall is constructed with individual noncommunicating stud cavities or protect both boxes with listed putty pads.
    - b. Do not install flush-mounted boxes with area larger than 16 square inches (0.0103 sq m) or such that the total aggregate area of openings exceeds 100 square inches (0.0645 sq m) for any 100 square feet (9.29 sq m) of wall area.

4. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 26 05 33.13.
  5. Locate junction and pull boxes in the following areas, unless otherwise indicated or approved by the Architect:
    - a. Concealed above accessible suspended ceilings.
  - E. Box Supports:
    1. Secure and support boxes in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
    2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
  - F. Install boxes plumb and level.
  - G. Flush-Mounted Boxes:
    1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch (6 mm) or does not project beyond finished surface.
    2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
    3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch (3 mm) at the edge of the box.
  - H. Install boxes as required to preserve insulation integrity.
  - I. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
  - J. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 13.
  - K. Close unused box openings.
  - L. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
  - M. Provide grounding and bonding in accordance with Section 26 05 26.
  - N. Identify boxes in accordance with Section 26 05 53.
- 3.03 CLEANING
- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.
- 3.04 PROTECTION
- A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

END OF SECTION

**SECTION 26 05 53**  
**IDENTIFICATION FOR ELECTRICAL SYSTEMS**

**PART 1 - GENERAL**

1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Voltage markers.
- D. Warning signs and labels.

1.02 RELATED REQUIREMENTS

- A. Section 09 91 00 - Painting.
- B. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

1.03 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. UL 969 - Marking and Labeling Systems Current Edition, Including All Revisions.

**PART 2 - PRODUCTS**

2.01 IDENTIFICATION REQUIREMENTS

- A. Identification for Equipment:
  - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
  - 2. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70 including but not limited to the following.
    - a. Service equipment.
    - b. Industrial control panels.
    - c. Motor control centers.
    - d. Elevator control panels.
    - e. Industrial machinery.
- B. Identification for Conductors and Cables:
  - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 05 19.
  - 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
- C. Identification for Boxes:
  - 1. Use voltage markers to identify highest voltage present.
  - 2. Use voltage markers or color coded boxes to identify systems other than normal power system.

- a. Color-Coded Boxes: Field-painted in accordance with Section 09 91 00 per the same color code used for raceways.
3. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.
  - a. For exposed boxes in public areas, use only identification labels.
4. Use warning labels to identify electrical hazards for boxes containing exposed live parts or exposed conductors operating at over 600 V nominal with the word message "DANGER; HIGH VOLTAGE; KEEP OUT".

## 2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
  1. Materials:
  2. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch (25 mm) high; Four, located at corners for larger sizes.
- B. Identification Labels:
  1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
  2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

## 2.03 VOLTAGE MARKERS

- A. Markers for Boxes and Equipment Enclosures: Use factory pre-printed self-adhesive vinyl or self-adhesive vinyl cloth type markers.
- B. Minimum Size:
  1. Markers for Pull Boxes: 1 1/8 by 4 1/2 inches (29 by 110 mm).
  2. Markers for Junction Boxes: 1/2 by 2 1/4 inches (13 by 57 mm).
- C. Legend:
  1. Markers for Voltage Identification: Highest voltage present.
  2. Markers for System Identification:
- D. Color: Black text on orange background unless otherwise indicated.

## 2.04 WARNING SIGNS AND LABELS

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
  1. Materials:
  2. Minimum Size: 7 by 10 inches (178 by 254 mm) unless otherwise indicated.
- C. Warning Labels:
  1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
  2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
  3. Minimum Size: 2 by 4 inches (51 mm by 102 mm) unless otherwise indicated.

## **PART 3 - EXECUTION**

### 3.01 PREPARATION

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
  - 1. Surface-Mounted Equipment: Enclosure front.
  - 2. Flush-Mounted Equipment: Inside of equipment door.
  - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
  - 4. Elevated Equipment: Legible from the floor or working platform.
  - 5. Interior Components: Legible from the point of access.
  - 6. Boxes: Outside face of cover.
  - 7. Conductors and Cables: Legible from the point of access.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Mark all handwritten text, where permitted, to be neat and legible.

END OF SECTION

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**SECTION 26 27 26**  
**WIRING DEVICES**

**PART 1 - GENERAL**

1.01 SECTION INCLUDES

- A. Wall switches.
- B. Wall dimmers.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 33.16 - Boxes for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush Mounted (General Specification) 2014g, with Amendment (2017).
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- C. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.
- D. NEMA WD 1 - General Color Requirements for Wiring Devices 1999 (Reaffirmed 2020).
- E. NEMA WD 6 - Wiring Devices - Dimensional Specifications 2021.
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 20 - General-Use Snap Switches Current Edition, Including All Revisions.
- H. UL 514D - Cover Plates for Flush-Mounted Wiring Devices Current Edition, Including All Revisions.
- I. UL 1472 - Solid-State Dimming Controls Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 33 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

**PART 2 - PRODUCTS**

2.01 WIRING DEVICE APPLICATIONS

- A. Provide wiring devices suitable for intended use and with ratings adequate for load served.

2.02 WALL SWITCHES

- A. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated on the drawings.



1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- B. Standard Wall Switches: Industrial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.
- C. Lighted Wall Switches: Industrial specification grade, 20 A, 120/277 V with illuminated standard toggle type switch actuator and maintained contacts; illuminated with load off; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.
- D. Locking Wall Switches: Industrial specification grade, 20 A, 120/277 V with lever type keyed switch actuator and maintained contacts; switches keyed alike; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

#### 2.03 WALL DIMMERS

- A. Wall Dimmers - General Requirements: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1472; types and ratings suitable for load controlled as indicated on the drawings.

#### 2.04 WALL PLATES

- A. Wall Plates: Comply with UL 514D.
  1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
  2. Size: Standard.
  3. Screws: Metal with slotted heads finished to match wall plate finish.

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

#### 3.02 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of wiring devices provided under this section.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

- E. Where required, connect wiring devices using pigtails not less than 6 inches (150 mm) long. Do not connect more than one conductor to wiring device terminals.
- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- H. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- I. Install wall switches with OFF position down.
- J. Install wall dimmers to achieve full rating specified and indicated after derating for ganging as instructed by manufacturer.
- K. Do not share neutral conductor on branch circuits utilizing wall dimmers.
- L. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- M. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

END OF SECTION

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**SECTION 26 51 00**  
**INTERIOR LIGHTING**

**PART 1 - GENERAL**

1.01 SECTION INCLUDES

- A. Interior luminaires.
- B. Ballasts and drivers.
- C. Lamps.
- D. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- B. Section 26 05 33.16 - Boxes for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. IES LM-63 - Approved Method: IES Standard File Format for the Electronic Transfer of Photometric Data and Related Information 2019.
- B. IES LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products 2019.
- C. IES LM-80 - Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources 2021.
- D. NECA/IESNA 500 - Standard for Installing Indoor Lighting Systems 2006.
- E. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems 2006.
- F. NEMA LE 4 - Recessed Luminaires, Ceiling Compatibility 2012 (Reaffirmed 2018).
- G. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 1598 - Luminaires Current Edition, Including All Revisions.
- I. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 33 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
  - 1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
  - 2. Provide photometric calculations where luminaires are proposed for substitution upon request.
- C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
  - 1. LED Luminaires:
    - a. Include estimated useful life, calculated based on IES LM-80 test data.

- 2. Provide electronic files of photometric data certified by a National Voluntary Laboratory Accreditation Program (NVLAP) lab or independent testing agency in IES LM-63 standard format upon request.
- D. Field quality control reports.
- 1.05 QUALITY ASSURANCE
  - A. Comply with requirements of NFPA 70.
  - B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- 1.06 DELIVERY, STORAGE, AND PROTECTION
  - A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting), NECA/IESNA 502 (industrial lighting), and manufacturer's written instructions.
  - B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.
- 1.07 FIELD CONDITIONS
  - A. Maintain field conditions within manufacturer's required service conditions during and after installation.
- 1.08 WARRANTY
  - A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
  - B. Provide 3-year manufacturer warranty for LED luminaires, including drivers.

## **PART 2 - PRODUCTS**

### 2.01 LUMINAIRE TYPES

- A. Furnish products as indicated in luminaire schedule included on the drawings.
- B. Substitutions: See Section 01 60 00 - Product Requirements.

### 2.02 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. Recessed Luminaires:
  - 1. Ceiling Compatibility: Comply with NEMA LE 4.
- H. LED Luminaires:
  - 1. Components: UL 8750 recognized or listed as applicable.
  - 2. Tested in accordance with IES LM-79 and IES LM-80.

3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.
- I. Track Lighting Systems: Provide track compatible with specified track heads, with all connectors, power feed fittings, dead ends, hangers and canopies as necessary to complete installation.
- J. Luminaires Mounted in Continuous Rows: Provide quantity of units required for length indicated, with all accessories required for joining and aligning.

### 2.03 BALLASTS AND DRIVERS

- A. Ballasts/Drivers - General Requirements:
  1. Provide ballasts containing no polychlorinated biphenyls (PCBs).
  2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.
- B. Dimmable LED Drivers:
  1. Dimming Range: Continuous dimming from 100 percent to five percent relative light output unless dimming capability to lower level is indicated, without flicker.
  2. Control Compatibility: Fully compatible with the dimming controls to be installed.

### 2.04 LAMPS

- A. Lamps - General Requirements:
  1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.
  2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.
  3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.
  4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.

### 2.05 ACCESSORIES

- A. Stems for Suspended Luminaires: Steel tubing, minimum 1/2" size, factory finished to match luminaire or field-painted as directed.
- B. Threaded Rods for Suspended Luminaires: Zinc-plated steel, minimum 1/4" size, field-painted as directed.

## **PART 3 - EXECUTION**

### 3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.

- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

### 3.03 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 260533.16 as required for installation of luminaires provided under this section.
- B. Install products in accordance with manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).
- D. Provide required support and attachment in accordance with Section 260529.
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Suspended Ceiling Mounted Luminaires:
  - 1. Do not use ceiling tiles to bear weight of luminaires.
  - 2. Do not use ceiling support system to bear weight of luminaires unless ceiling support system is certified as suitable to do so.
  - 3. Secure lay-in luminaires to ceiling support channels using listed safety clips at four corners.
  - 4. See appropriate Division 9 section where suspended grid ceiling is specified for additional requirements.
- G. Recessed Luminaires:
  - 1. Install trims tight to mounting surface with no visible light leakage.
- H. Suspended Luminaires:
  - 1. Unless otherwise indicated, specified mounting heights are to bottom of luminaire.
  - 2. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
- I. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.
- J. Install accessories furnished with each luminaire.
- K. Bond products and metal accessories to branch circuit equipment grounding conductor.
- L. Install lamps in each luminaire.

### 3.04 FIELD QUALITY CONTROL

- A. See Section 01 43 00 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

### 3.05 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.
- B. Aim and position adjustable emergency lighting unit lamps to achieve optimum illumination of egress path as required or as directed by Architect or authority having jurisdiction.

3.06 CLEANING

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.07 CLOSEOUT ACTIVITIES

- A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.
- B. See Section 01 78 00 - Demonstration and Training, for additional requirements.
- C. Demonstration: Demonstrate proper operation of luminaires to Architect, and correct deficiencies or make adjustments as directed.

END OF SECTION



