

# INVITATION FOR BID

ITB No. C-1631A



## TMT WAREHOUSE # 1 RE-ROOF TALLEYRAND MARINE TERMINAL

**BID DUE DATE: TUESDAY, NOVEMBER 16, 2021**

**Sandra Platt, Sr. Contract Specialist**

[Sandra.Platt@JAXPORT.com](mailto:Sandra.Platt@JAXPORT.com)

PROCUREMENT SERVICES

2831 Talleyrand Avenue, Jacksonville, Florida 32206

[JAXPORT.com/procurement/active-solicitations](http://JAXPORT.com/procurement/active-solicitations)



**BID RELATED DOCUMENTS**

**FOR**

**TMT WAREHOUSE #1 RE-ROOF**

**Contract No.: C-1631A**

**TALLEYRAND MARINE TERMINAL**

# BID RELATED DOCUMENTS

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**INVITATION FOR BIDS**  
**TMT WAREHOUSE #1 RE-ROOF**  
**TALLEYRAND MARINE TERMINAL**  
**JAXPORT PROJECT NO.: T2018-01**  
**JAXPORT CONTRACT NO.: C-1631A**

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OCTOBER 14, 2021

Sealed bids will be received by JAXPORT up to **2:00 PM (EST)**, local time, **TUESDAY, NOVEMBER 16, 2021**, at which time they shall be opened via "Go To Meeting" at: <https://global.gotomeeting.com/join/591521189>, Access Code: **591-521-189** for **TMT WAREHOUSE #1 RE-ROOF**.

All bids must be submitted in accordance with specifications and drawings for Contract No. **C-1631A**.

**IT IS MANDATORY THAT THE BIDDER SHALL ACKNOWLEDGE THE INCLUSION OF ALL ADDENDA ON THE BID FORM, FORM BF. ACKNOWLEDGEMENT SHALL BE MADE BY INITIALS AND DATE. FAILURE TO ACKNOWLEDGE ALL ADDENDA SHALL RESULT IN REJECTION OF THE BID.**

PLEASE VISIT [HTTPS://WWW.JAXPORT.COM/PROCUREMENT/ACTIVE-SOLICITATIONS/](https://www.jaxport.com/procurement/active-solicitations/) OR CALL PROCUREMENT SERVICES AT (904) 357-3017, PRIOR TO THE BID OPENING TO DETERMINE IF ANY ADDENDA HAVE BEEN RELEASED ON THIS CONTRACT.

A PRE-BID CONFERENCE WILL BE HELD ON **MONDAY, OCTOBER 25, 2021, AT 10:00 AM (EST)**, "Go To Meeting" at:

<https://global.gotomeeting.com/join/274262573>, Access Code: **274-262-573**

**ATTENDANCE BY A REPRESENTATIVE OF EACH PROSPECTIVE BIDDER IS ENCOURAGED.**

Bid and contract bonding are required.

This project is funded by JAXPORT and State of Florida grant program GOG95.

The DBE Participation Goal established for this project is **(0%)**; however, DBE participation is strongly encouraged.

*Lisa Gee*

Lisa Gee (Oct 12, 2021 15:36 EDT)

Lisa Gee  
Director of Procurement Services  
JAXPORT

# BID CONTENTS AND FORMAT

## TMT WAREHOUSE #1 RE-ROOF

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Interested bidders shall prepare and electronically submit, a bid package consisting of bidder's REQUIREMENTS (a-i), signed FORM BF and any other technical information required in order to be considered for award of this project. JAXPORT no longer accepts any bid packages submitted by Mail or Hand-Deliveries. Please visit the JAXPORT's website at [www.jaxport.com](http://www.jaxport.com) for more information and updates. Bids received via email, fax or hand delivery will be declared nonconforming and will not be read or accepted.

1. BIDDER REQUIREMENTS FOR CONTRACT NO.: **C-1631A**

NAME OF FIRM: \_\_\_\_\_

The electronically submitted documents shall contain the following information:

- a. Bid bond, certified check or cashier's check for 5 percent of the amount of the bid (See Article 6 in Supplemental Instructions to Bidders).
  - b. Form COI, "Conflict of Interest Certificate" statement.
  - c. Form PEC, "Sworn Statement on Public Entity Crime."
  - d. Bidders Representation and Authorization – Written Statement (Only if necessary).
  - e. Form MR, "Bidders Minimum Requirements" (See Article 4 in Supplemental Instructions to Bidders).
  - f. Form CCRSC, "Contractor Certification Regarding Scrutinized Companies."
  - g. Form E-Verify, "Acknowledgement and Acceptance of E-Verify Compliance."
  - h. Form EB-1 "E-Builder User Agreement."
  - i. DBE Form 1, "Schedule of Subcontractor/Sub-consultant Participation."
2. **Signed FORM BF, and any technical information required** to be submitted by the specifications.

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Alternatively, the entire bid package must be submitted in **PDF format only** through E-Builder Electronic Bid Submission, in sufficient time to ensure receipt prior to the time specified in the "[Invitation for Bids](#)."

**Bids must be submitted prior to 2:00 PM (EST), NOVEMBER 16, 2021. The submit button will deactivate exactly at 2:00 PM and you will not be permitted to submit your bid regardless of where you are in the process. Please plan accordingly.**

The PDF file name(s) should read "**C-1631A**." "How to Submit Your Bid Response in E-Builder" is provided as "Attachment No. 1." Additional instructions on how to navigate in E-Builder, click the below link to access the "**Bidders Portal Instructional Training Video**":

<https://resources.e-builder.net/bidding/e-builder-bidders-portal-instructional-training-video>

It is the sole responsibility of the Bidder to have its bid submitted to JAXPORT as specified herein before the aforementioned date and time. For the purpose of the ITB, a Bid is considered delivered when confirmation of delivery is provided by E-Builder. Bidders must ensure that its electronic submission in E-Builder can be assessed and viewed at the time of the Bid Opening. JAXPORT will consider any file that cannot be immediately accessed and viewed at the time of the Bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. Bidders will not be permitted to unencrypt files, remove password protections, or resubmit documents after Bid Opening to make a file viewable if those documents are required with Bid. All expenses for submitting Bids to JAXPORT are to be borne by the Bidder and will not be borne, charged to or reimbursed by JAXPORT in any manner or under any circumstance.

If your firm does not intend to submit a bid for this project, please complete Form NB and fax to (904) 357-3077 or e-mail to [Sandra.Platt@JAXPORT.com](mailto:Sandra.Platt@JAXPORT.com)

# "NO BID" RESPONSE

## TMT WAREHOUSE #1 RE-ROOF

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PROJECT: **TMT WAREHOUSE #1 RE-ROOF**

CONTRACT NO. **C-1631A**

BID OPENING DATE: **TUESDAY, NOVEMBER 16, 2021** TIME: **2:00 PM (EST)**

If your firm does not intend to submit a bid for this project, please provide us with the information requested below and fax to (904) 357-3077 or e-mail to [Sandra.Platt@JAXPORT.com](mailto:Sandra.Platt@JAXPORT.com)

NAME OF FIRM: \_\_\_\_\_

We are unable to submit a bid for this project for the following reasons:

SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_

TELEPHONE: (    )

We (    ) are / (    ) are not interested in bidding on similar JAXPORT projects in the future.

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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### 1. AUTHENTICATION OF BID FORM

All bids submitted for this project shall be signed as outlined below. **FAILURE ON THE PART OF THE INDIVIDUAL, PARTNERSHIP OR CORPORATION TO SIGN THE BID, FORM BF, WILL CONSTITUTE A MATERIAL IRREGULARITY AND SHALL RESULT IN THE REJECTION OF THE BID.**

- a. If made by an individual, FORM BF shall show the name and business address of the individual or firm and shall be signed by the individual or authorized representative of the individual.
- b. If made by a partnership, FORM BF shall show the name and business address of the partnership and shall be signed by a partner or authorized representative of the partnership.
- c. If made by a corporation, FORM BF shall show the name and business address of the corporation and shall be signed by an officer or an authorized representative of the corporation.

### 2. AWARD OF CONTRACT

The Authority reserves the right to award this contract to the lowest, responsive, responsible bidder, and whose bid is fully conforming to the requirements of the bid documents. Nevertheless, JAXPORT reserves the right to waive informalities in any bid, to reject any or all bids, and to accept the bid which in its judgment will be in the best interest of JAXPORT. JAXPORT will be the sole judge of which Bid will be in its best interest and its decision will be final.

JAXPORT reserves the right to award this contract to the bidder offering the lowest price consistent with meeting all specifications, terms, conditions, delivery requirements set forth on this bid. No award will be made until all necessary inquiries have been made into the responsibility of the lowest conforming bidder and JAXPORT is satisfied that the lowest bidder met all the requirements, is qualified and has the necessary organization, capital and resources required to perform the work under the terms and conditions of the contract. JAXPORT reserves the right to accept or reject any or all Bids, in whole or in part.

### 3. BID AMENDMENTS

Bid price amendments are permissible if received by JAXPORT Procurement Services, via E-Builder electronic submission, prior to the bid opening time stated in the "Invitation for Bids."

Refer to **Attachment No. 1** "How to Submit Your Bid Response in E-Builder." For additional instructions on how to navigate in E-Builder, click the below link to access the "**Bidders Portal Instructional Training Video**":

<https://resources.e-builder.net/bidding/e-builder-bidders-portal-instructional-training-video>

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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It is the responsibility of the individual, partnership, or corporation submitting the bid to ensure that any amendment, is made prior to the bid opening time stated in the "Invitation for Bids." JAXPORT accepts no responsibility for late amendments, and bidders shall not be permitted to modify their bids after the specified time for the bid opening. EMAIL, MAIL AND FACSIMILE TRANSMISSION OF AMENDMENTS TO JAXPORT WILL NOT BE ACCEPTED.

All amendments must be signed by an individual authorized to sign the bid. An unsigned amendment shall be considered nonconforming and will therefore cause the amendment to be rejected. No amendment shall be withdrawn after the time stated in the "Invitation for Bids" has been reached and the call for bids has been closed.

### 4. BIDDERS MINIMUM REQUIREMENTS

Contractors are required to upload via E-Builder Electronic Bid Submission FORM MR, "BIDDERS MINIMUM REQUIREMENTS," and include it as part of the "BIDDER REQUIREMENTS" (see section "Bid Contents and Format"). Before an award is made, Minimum Requirements of the apparent low conforming bidders will be examined to determine the Contractor's financial responsibility and work history, experience and current workload. Additional information may be requested if JAXPORT considers it necessary to make a proper evaluation. Based on the review of the Contractor's financial condition, previous experience, current workload or any other information included on BIDDERS MINIMUM REQUIREMENTS or subsequently requested from the Contractor, JAXPORT reserves the right to reject any Contractor's bid, should, in its judgment, the Contractor be deemed to be unqualified or incapable of successfully completing the project in a timely manner.

The Minimum Requirements requires a financial statement as outlined in Section 119.071, Florida Statutes, and provides:

"Any financial statement which an agency requires a prospective bidder to submit in order to pre-qualify for bidding or for responding to a Bid for a road or any other public works' project is exempt from s. 119.07 (1) and s.24(a), Art. I of the State Constitution."

### 5. BID FORM

The bidder shall submit the bid on Bid FORM BF furnished herein. If additional forms are required, they may be secured from JAXPORT or may be duplicated. The bidder shall state the price, typewritten or written in ink, in numerals, for which the bidder proposes to do each item of work. See "BID CONTENTS AND FORMAT" section for more details.

**NOTE: IT IS MANDATORY THAT THE BIDDER SHALL ACKNOWLEDGE THE INCLUSION OF ALL ADDENDA ON THE BID FORM, FORM BF. ACKNOWLEDGEMENT SHALL BE MADE BY INITIALS AND DATE. FAILURE TO ACKNOWLEDGE ALL ADDENDA SHALL RESULT IN REJECTION OF THE BID.**

**PLEASE VISIT [HTTPS://WWW.JAXPORT.COM/PROCUREMENT/ACTIVE-SOLICITATIONS/](https://www.jaxport.com/procurement/active-solicitations/) OR CALL PROCUREMENT SERVICES AT (904) 357-3017,**

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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**PRIOR TO THE BID OPENING TO DETERMINE IF ANY ADDENDA HAVE BEEN RELEASED ON THIS CONTRACT.**

### **6. BID GUARANTY**

Each bidder shall furnish with the bid a bid bond in an amount not less than **5** percent of the total bid, as a guaranty that the bid will not be withdrawn for a period of **90** calendar days after opening of bids. As soon as practicable after opening of bids, any check submitted as guaranty by other than the three low conforming bidders will be returned. Any such checks submitted by the remaining three bidders will be returned after execution of the Agreement and submittal of a contract bond by the successful bidder.

If contract bond is not furnished within the time stated herein, the bid guaranty will be forfeited and the contract may be awarded the next low conforming bidder. **THE BID BOND MUST BE SECURED FROM AND EXECUTED BY AN AGENCY DULY-LICENSED TO DO BUSINESS IN THE STATE OF FLORIDA, PURSUANT TO CHAPTER 255 OF THE FLORIDA STATUTES, SECTION 255.05. FAILURE TO FURNISH THE BID GUARANTY, INCLUDING POWER OF ATTORNEY, IF REQUIRED, WILL CONSTITUTE A MATERIAL IRREGULARITY AND SHALL RESULT IN THE REJECTION OF THE BID.**

If a bid bond is used, it shall be written through a Surety bond agency and with a Surety company meeting the same specifications as those required for contract bonds.

The bid bond provided by the Owner of the Property/Contracting Public Entity may be utilized (see Form BBF). Surety's standard bond form for State of Florida is acceptable. Refer also to "Surety Bonds" of the "General Conditions."

### **7. BID OPENING - PROCEDURE**

At the time and place stated in the "Invitation for Bids," JAXPORT's representative will announce the close of bidding and commence with the Bid Opening. Bidders are invited to attend the **GoToMeeting** proceedings .

The Bidder's name and the total amount used for basis of award will be the only information read aloud.

### **8. EXAMINATION OF DRAWINGS, SPECIFICATIONS, AND SITE OF WORK**

The bidder is advised, before submitting a bid, to visit the site of the proposed work and become familiar with the nature and extent of the work and any local conditions that may in any manner affect the work to be done, and equipment, materials, and labor required. The bidder is required to examine carefully the drawings and specifications and contract forms, and to be informed regarding any and all conditions and requirements contained herein that may in any manner affect the work to be performed. No allowances will be made for conditions overlooked or ignored by the bidder.

# **SUPPLEMENTAL INSTRUCTIONS TO BIDDERS**

## **TMT WAREHOUSE #1 RE-ROOF**

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### **9. EXECUTION OF THE AGREEMENT**

The individual, firm, or corporation to which the contract has been awarded shall sign the Agreement and return it within ten (10) calendar days after receipt from JAXPORT.

### **10. FAILURE TO EXECUTE THE AGREEMENT**

Failure on the part of the successful bidder to execute the Agreement as required will be just cause for the annulment of the award, and in the event of the revocation of the award, the bidder shall forfeit the Bid Guaranty. This forfeiture shall not be construed as a penalty, but as reasonable, fixed and liquidated damages because of the bidder's failure to enter into contract with JAXPORT.

### **11. FAMILIARITY WITH LAWS**

The bidder shall be familiar and comply with all Federal, State, and local laws, ordinances, rules and regulations that in any manner affect the work. Lack of such knowledge on the part of the bidder will in no way relieve the bidder from any responsibility.

### **12. FLORIDA STATE SALES TAX**

It is the bidder's sole responsibility to incorporate any and all applicable taxes into the bid. However, Chapter 212 of the Florida Statutes provides JAXPORT with sales tax exemption for all procurements made directly by JAXPORT. After a contract has been awarded, certain items which have been included in this bid may be purchased directly by JAXPORT in order to benefit from this tax savings program (See Special Conditions, Section 10, Tax Savings Program, General for more information).

### **13. OMISSIONS, DISCREPANCIES AND ADDENDA**

- a. Should an omission or discrepancy be found in the bidding documents, or if there is any doubt as to the meaning, the bidder shall notify JAXPORT Procurement Services, in writing, in sufficient time in order that an addendum might be issued to all prospective bidders, if necessary.
- b. Any addenda issued by JAXPORT for the purposes of changing the intent of the plans and specifications or clarifying the meaning of same shall be binding in the same way as if written in the specifications. All addenda will be issued by Procurement Services prior to the bid opening. It is each bidder's sole responsibility to contact Procurement Services to insure that they have received all addenda and that they have obtained the addenda in sufficient time to properly evaluate the contents before submitting a bid. It is the usual practice for JAXPORT to email addenda to known prospective bidders, but JAXPORT does not guarantee that all bidders will receive addenda in this manner in due time before the bid opening.

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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- c. It is mandatory that the bidder shall acknowledge the inclusion of all addenda on the bid form, FORM BF. Acknowledgement shall be by initials and date. Failure to acknowledge all addenda shall result in rejection of the bid.

### 14. PROTEST PROCEDURES

Respondents shall file any protest regarding this ITB in writing, in accordance with JAXPORT's Protest Procedures promulgated on SOP- 1215 Procurement Code for the Jacksonville Port Authority, available at <https://www.jaxport.com/procurement/active-solicitations/>

### 15. PUBLIC MEETING REQUIREMENTS

JAXPORT complies with Section 286.011 of the Florida Statutes. Therefore certain types of staff meetings and meetings of JAXPORT Awards Committee, and Board of Directors are required to be held in public, with sufficient notice made of the time and date of the meeting(s). All notices of public meetings are posted in the lobby of JAXPORT, 2831 Talleyrand Avenue, Jacksonville, FL 32206 and on JAXPORT's website at [www.jaxport.com](http://www.jaxport.com). For information concerning when the project(s) will be submitted for award, contact JAXPORT Procurement Services at telephone (904) 357-3017, Monday through Friday.

### 16. REQUIREMENTS OF THE BIDDERS

The successful bidder shall hold a current Contractor's certificate for the type of work to be performed, if it is required by JAXPORT and under applicable law. Evidence of such certificate shall be presented before contract award, or it may be requested with the Bidder's REQUIREMENTS at the time of bid.

In addition, Plumbing and Electrical Contractors and Subcontractors shall be required to hold current certificates issued by the City of Jacksonville qualifying them to perform such work. Chapter 489.103, Florida Statutes, provides that Contractors involved in work on bridges, roads, highways, railroads, or utilities and services incidental thereto, and certain specialties are exempt from licensing by the State of Florida. The Department of Professional and Occupational Registration, State of Florida, advises that wharves, airfield pavements, and fences are included among the specialties which are exempt from licensing.

### 17. STATEMENTS BY BIDDERS

- a. **CONFLICT OF INTEREST** - Pursuant to Chapter 112 of the Florida Statutes, Bidders are required to complete and submit with their bids a "Conflict of Interest" statement. Form COI is provided in the bid documents for that purpose and must be included as part of the "BIDDER REQUIREMENTS" at the time bids are submitted.

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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Subcontractors, Vendors, and Suppliers selected by JAXPORT to participate in the Tax Savings Program will be required to submit Conflict of Interest statements prior to any Purchase Orders being issued. The Prime Contractor shall be responsible for obtaining those statements from Subcontractors, Vendors and Suppliers and providing same to JAXPORT in a timely manner. Refer to the "Special Conditions" entitled, "Tax Savings Program – General" of the contract documents for more details on the Tax Savings Program.

- b. **PUBLIC ENTITY CRIME** - Pursuant to Chapter 287 of the Florida Statutes, Bidders are required to complete and submit with their bids a Sworn Statement Pursuant to Section 287.133 (3) (a), Florida Statutes, on Public Entity Crimes. Form PEC is provided in the bid documents for that purpose and must be included as part of the "BIDDER REQUIREMENTS" at the time bids are submitted.

A person or affiliate placed on the convicted vendor list following a conviction for a public entity crime is prohibited from doing any of the following for a period of 36 months from the date of being placed on the convicted vendor list:

- Submitting a bid on a contract to provide any goods or services to a public entity;
  - Submitting a bid on a contract with a public entity for the construction or repair of a public building or public work;
  - Submitting bids on leases of real property to a public entity;
  - Being awarded or performing work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and
  - Transacting business with any public entity in excess of Category Two threshold amount (\$35,000) provided in section 287.017 of the Florida Statutes.
- c. **DISCRIMINATORY VENDOR LIST** – An entity or affiliate placed on the discriminatory vendor list pursuant to section 287.134 of the Florida Statutes may not:
- Submit a bid on a contract to provide any goods or services to a public entity;
  - Submit a bid on a contract with a public entity for the construction or repair of a public building or public work;
  - Submit bids on leases of real property to a public entity;
  - Be awarded or perform work as a contractor, supplier, subcontractor,

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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or consultant under a contract with any public entity; or

- Transact business with any public entity.
- To view a current list, visit:  
[http://www.dms.myflorida.com/business\\_operations/state\\_purchasing/vendor\\_information/convicted\\_suspended\\_discriminatory\\_complaints\\_vendor\\_lists](http://www.dms.myflorida.com/business_operations/state_purchasing/vendor_information/convicted_suspended_discriminatory_complaints_vendor_lists)

d. **BIDDERS REPRESENTATION AND AUTHORIZATION** – In submitting a bid, each Bidder understands, represents, and acknowledges the following (if the Bidder cannot so certify to any of the following, the Bidder shall submit with its response a written explanation of why it cannot do so).

- The Bidder is not currently under suspension or debarment by the State or any other governmental authority.
- To the best of the knowledge of the person signing the bid documents, the Bidder, its affiliates, subsidiaries, directors, officers, and employees are not currently under investigation by any governmental authority and have not in the last ten (10) years been convicted or found liable for any act prohibited by law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract.
- Bidder currently has no delinquent obligations to the State, including a claim by the State for liquidated damages under any other contract.
- The bid submission is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive response.
- The prices and amounts have been arrived at independently and without consultation, communication, or agreement with any other respondent or potential respondent; neither the prices nor amounts, actual or approximate, have been disclosed to any Bidder or potential Bidder, and they will not be disclosed before the solicitation bid opening.
- The Bidder has fully informed the Buyer in writing of all convictions of the firm, its affiliates (as defined in section 287.133(1)(a) of the Florida Statutes), and all directors, officers, and employees of the firm and its affiliates for violation of state or federal antitrust laws with respect to a public contract for violation of any misrepresentation with respect to a public contract. This includes disclosure of the names of current employees who were convicted of contract crimes while in the employ of another company.
- The product(s) offered by the Bidder will conform to the specifications without exception.

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

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- The Bidder has read and understands the Contract terms and conditions, and the submission is made in conformance with those terms and conditions.
  - If an award is made to the Bidder, the Bidder agrees that it intends to be legally bound to the Contract that is formed with JAXPORT.
  - The Bidder has made a diligent inquiry of its employees and agents responsible for preparing, approving, or submitting the bid response, and has been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, act or other conduct inconsistent with any of the statements and representations made in the response.
  - The respondent shall indemnify, defend, and hold harmless the Buyer and its employees against any cost, damage, or expense which may be incurred or be caused by any error in the respondent's preparation of its bid.
  - All information provided by, and representations made by, the Bidder are material and important and will be relied upon by the Buyer in awarding the Contract. Any misstatement shall be treated as fraudulent concealment from the Buyer of the true facts relating to submission of the bid. A misrepresentation shall be punishable under law, including, but not limited to, Chapter 817 of the Florida Statutes.
  - That the Bidder has carefully examined the site of the work and that from his/her investigations has been satisfied as to the nature and location of the work, the kind and extent of the equipment and other facilities needed for the performance of the work, the general and local conditions, all difficulties to be encountered, and all other items which in any way affect the work or its performance.
  - That the Bidder is in full compliance with all federal, state, and local laws and regulations and intends to fully comply with same during the entire term of the contract.
- e. **SCRUTINIZED COMPANIES – ACTIVITIES IN SUDAN AND/OR IRAN**  
Section 287.135 of the Florida Statutes prohibits agencies from contracting with a company on the Scrutinized Companies with Activities in Sudan List or on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, lists created pursuant to section 215.473, Florida Statutes, for goods or services over \$1,000,000.  
Bidders are required to complete and submit with their bids a Contractor Certification Regarding Scrutinized Companies, Form CCRSC is provided in the bid documents for that purpose and must be included as part of the "BIDDER REQUIREMENTS" at the time bids are submitted.



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Bidder must certify that it is not listed on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to section 215.473, Florida Statutes. Pursuant to section 287.135(5), F.S., Contractor agrees JAXPORT may terminate this contract immediately without penalty if the Contractor is found to have submitted a false certification or if Contractor is placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List.

**f. INSPECTOR GENERAL COOPERATION**

Pursuant to Chapter 20 of the Florida Statutes, Contractors and Subcontractors agree to cooperate with the inspector general in any investigation, audit inspection, review, or hearing pursuant to Section 20.055(5). In submitting a bid, each corporation, partnership, or person understands and will comply with this section.

### **18. E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION**

The successful bidder agrees to utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the contractor during the term of this contract. Successful bidders must include in all subcontracts the requirement that subcontractors performing work or providing goods and services utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term. The successful bidder further agrees to maintain records of its participation and compliance and its subcontractor's participation and compliance with the provisions of the E-Verify program, and to make such records available to JAXPORT upon request. Failure to comply with this requirement will be considered a material breach of the contract.

### **19. DISADVANTAGED BUSINESS ENTERPRISE (DBE) POLICY**

**a. DBE POLICY AND OBLIGATION:**

It is the policy of JAXPORT that DBEs, as defined in 49 C.F.R. Part 26, as amended, shall have the opportunity to participate in the performance of contracts financed in whole or in part with FDOT funds under this contract. The DBE requirements of applicable federal and state laws and regulations apply to this contract. JAXPORT and its contractors agree to ensure that DBEs have the opportunity to participate in the performance of this contract. In this regard, all contractors shall take all necessary and reasonable steps in accordance with applicable federal and state laws and regulations to ensure that the DBEs have the opportunity to perform contracts. JAXPORT's contractors and subcontractors shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts,

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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entered pursuant to this contract.

- b. **DBE UTILIZATION** – The Department of Transportation (DOT) began its race neutral DBE program on January 1, 2000. Contract specific goals are not placed on State/Federal contracts; however, the DOT has an overall 10.65% goal it must achieve. JAXPORT has adopted the DOT's DBE Program goal. The DBE participation goal for this contract is **0%**; however, DBE participation is strongly encouraged. Further information about the DOT's DBE Program goal can be found at: [www.dot.state.fl.us/equalopportunityoffice/](http://www.dot.state.fl.us/equalopportunityoffice/).

JAXPORT will be monitoring potential or anticipated DBE utilization for contracts. When the low bidder executes the contract, information will be requested of the contractor's anticipated DBE participation for the project. While the utilization is not mandatory in order to be awarded the project, continuing utilization of DBE firms on contracts supports the success of Florida's Voluntary DBE Program, and supports contractors' Equal Employment Opportunity and DBE Affirmative Action Programs.

FDOT's search engine for the business directory can be found at: <https://www3.dot.state.fl.us/EqualOpportunityOffice/biznet/mainmenu.asp>

- c. **CONTRACT ASSURANCE** – The Contractor, Subrecipient or Subcontractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of Department-assisted contracts. Failure of the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as JAXPORT deems appropriate, which may include, but is not limited to, 18-009.
1. Withholding monthly progress payments
  2. Assessing sanctions;
  3. Liquidated damages; and/or
  4. Disqualifying the Contractor from future bidding as non-responsible.
- d. **RECORDS AND REPORTS** – Contractors are required to provide the following information to JAXPORT's Procurement Department SEB Programs Coordinator for verification.
1. Anticipated DBE Participation Statement (Form No. DBE-1)
- The "Anticipated DBE Participation Statement" shall be completed and submitted by the Contractor at the pre-construction conference. The

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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Statement must only include companies certified as a DBE. The Statement can and should be updated when additions or deletions are made through the life of the contract. This will not become a mandatory part of the contract. It will assist JAXPORT and FDOT in tracking planned or estimated DBE participation.

The Contractor must submit the Statement to:

JAXPORT Procurement Department  
SEB Programs Coordinator  
2831 Talleyrand Avenue  
Jacksonville, Florida 32206  
Office Number: (904) 357-3003  
Fax Number: (904) 357-3077

JAXPORT will review and approve the completed form and send the Statement to the District LAP Administrator or designee who will forward the information to the Department's Equal Opportunity Office at the following address:

Florida Department of Transportation  
Equal Opportunity Office  
605 Suwannee Street. MS-65  
Tallahassee, Florida 32399-0450  
Fax Number: (850) 414-4879

### 2. Instructions for Reporting Actual Payments

JAXPORT is required to report data on actual payments, minority status, and the type of work of all Subcontractors, Subconsultants, and major Suppliers. Each month the JAXPORT must report actual payments (including retainage) to all DBE Subcontractors, Subconsultants, and Suppliers. Payments to all non-DBE Subcontractors and Subconsultants can be reported either monthly or at the end of the project. Local Agency may submit this information to the District LAP Administrator or designee manually or electronically in an Excel spreadsheet.

Subsequently, Prime Contractors are required to report payments made to DBE Subcontractors manually or electronically to JAXPORT's SEB Programs Coordinator on the "**Contractor's Monthly Report**" **FORM 5**.

### e. RESOURCES

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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Florida Department of Transportation

Equal Opportunity Office

<http://www.dot.state.fl.us/equalopportunityoffice/>

49 CFR Part 26

<https://www.civilrights.dot.gov/page/dbe-library>

Disadvantaged Business Enterprise Directory

<https://www3.dot.state.fl.us/EqualOpportunityOffice/biznet/mainmenu.asp>

## 20. PUBLIC RECORDS

In accordance with Section 119.0701, Florida Statutes, the Contractor shall:

- (a) Keep and maintain public records required by JAXPORT to perform the services; and
- (b) Upon request from JAXPORT's custodian of public records, provide JAXPORT with a copy of the requested records or allow records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided for in Chapter 119, Florida Statutes, or as otherwise provided by law; and
- (c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Contract term and following completion of this Contract if Contractor does not transfer the records to JAXPORT; and
- (d) Upon completion of this Contract, transfer to JAXPORT at no cost all public records in possession of Contractor or keep and maintain public records required by JAXPORT to perform the service. If Contractor transfers all public records to JAXPORT upon completion of this Contract, Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If Contractor keeps and maintains public records upon completion of this Contract, Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to JAXPORT upon request from JAXPORT's custodian of public records in a

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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format that is compatible with JAXPORT's information technology systems.

The above requirements apply to a "Contractor" as defined in Section, 119.0701, Florida Statutes.

IF CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, IT IS THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT. CONTACT JAXPORT'S CUSTODIAN OF PUBLIC RECORDS AT (904) 357-3091 [public.records@jaxport.com](mailto:public.records@jaxport.com); JACKSONVILLE PORT AUTHORITY, PUBLIC RECORDS REQUEST, 2831 TALLEYRAND AVENUE, JACKSONVILLE, FLORIDA 32206.

### **21. SECURITY IMPLEMENTATION PROCEDURE**

JAXPORT's rigid security standards include the Federal Transportation Worker Identification Credential (TWIC) program, which is administered by the Transportation Security Administration. The TWIC is required for unescorted access to all JAXPORT terminals. It is your responsibility as the Prime Contractor to ensure that all of your employees and sub-contract personnel working for your company have been properly screened and credentialed with the TWIC, and the JAXPORT Business Purpose Credential.

#### **Transportation Worker Identification Credential (TWIC)**

The TWIC is required for all Prime Contractor/Sub-Contractor employees working on the job site for this Contract. This credential is for all personnel requiring unescorted access to secure-restricted areas of Maritime Transportation Security Act (MTSA)-regulated facilities. TSA will issue a tamper-resistant "Smart Card" containing the person's biometric (fingerprint template) to allow for a positive link between the card and the individual.

The fee for obtaining each TWIC® is \$125.25, and the credential is valid for five years. The pre-enrollment process can be initiated online at <https://universalenroll.dhs.gov/> or at an IdentoGo TSA's Universal Enrollment Service Center.

#### **TWIC: Universal Enrollment Centers**

The Jacksonville Universal Enrollment Center is located at: 2121 Corporate Square Blvd. Building A, Suite 165, Jacksonville, FL 32216. The office hours are Monday-Friday: 09:00 AM –11:00AM / 12:00PM- 6:00 PM, For general information you can call the TWIC Call Center at 1-855-347-8371, Monday-Friday, 8 a.m. to 10 p.m. Eastern Time.

#### **JAXPORT Business Purpose Credential**

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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In addition to the TWIC, JAXPORT requires a JAXPORT Business Purpose Credential to be issued and registered at JAXPORT's Access Control Center located at the 9620 Dave Rawls Blvd. Jacksonville Fl. 32226 (Brick Building next to the Main Gate concourse). Hours of operation are Monday-Friday 7:30AM-4:30PM. The JAXPORT Business Purpose Credential is issued at no cost but expires at the end of the contract provisions.

The JAXPORT prime contractor is responsible for sponsoring all sub-contractors for the JAXPORT Business Purpose Credential.

Federal Training Requirement: (33CFR 105.215) Maritime Security Awareness Training

**JAXPORT is a federally regulated facility under the Maritime Transportation Security Act of 2002 (MTSA) as codified under the US Code of Federal Regulation 33 CFR Chapter 1, Subchapter H Part 105.**

*33 CFR 105.215-Security training for all other facility personnel.* All other facility personnel, including contractors, whether part-time, full-time, temporary, or permanent, must have knowledge of Maritime security measures and relevant aspects of the TWIC program, through training or equivalent job experience.

To meet the requirements of 33 CFR 105.215; the Prime Contractor/Sub-Contractor employees and all support personnel: Engineers, Suppliers, Truck Drivers, Laborers, Delivery persons etc. (NO EXCEPTIONS) are required to attend JAXPORT's Maritime Security Training given every Wednesday (10am, 2pm & 5pm) at JAXPORT's Access Control Building. Contact the JAXPORT Access Control Center to arrange for the training. JAXPORT will work with Contractors to conduct timely Maritime Security Training classes for larger groups.

All Prime Contractor/Sub-Contractor employees working on the job site for JAXPORT are required to attend JAXPORT's 33 CFR 105.215 (Security/Safety Training for All Other Facility Personnel) class at a cost of \$35.00 per person. Arraignments can be made by calling JAXPORT Access Control Phone# (904) 357-3344.

### **TWIC Escort Provisions**

To ensure contractors can begin work after they receive a Notice to Proceed, JAXPORT will allow prime contractors to have dedicated employee TWIC Escort(s) to handle those contractor employees who have not yet received their TWIC. Escorted employees must have a TWIC receipt validated by Access Control to receive a temporary JAXPORT Business Purpose credential.

Contractor deliveries from Non-TWIC vendors may be escorted by JAXPORT approved Prime Contractor escorts. The prime contractor will be required to submit a request for

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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TWIC Escort privileges to [accesscontrol@jaxport.com](mailto:accesscontrol@jaxport.com) . Once approved, the contractor's employee(s) will attend a JAXPORT provided MTSA TWIC Escort Class in addition to the standard MTSA 33 CFR 105.215 Security Class at a combined cost of \$55.00. **These authorized individual(s) must have no collateral duties that will separate the escort from the escorted visitor while serving as escort.** Note - Limitations to the number of TWIC Escort authorizations will be set by the JAXPORT Public Safety Department.

Truck drivers, vendors, labor may not conduct escorts.

A Contractor authorized by JAXPORT to conduct an escort of a non-TWIC holder in a restricted area must have:

- Successfully completed MTSA 33 CFR 105.215 Security/ Escort Class at \$55.00
- Have a valid TWIC on their person
- Have an approved JAXPORT TWIC ESCORT credential on their person
- Have a tamper-resistant laminated government issued photo identification card on their person.

TWIC Escorts must complete the JAXPORT TWIC Escort Form daily before getting to the access gate. The form will be kept on file at the JAXPORT Security Operations Center (SOC).

The Prime Contractor assumes full liability for the escorted person(s) while on JAXPORT property. The person under escort must have a continuous side by side escort in a secure-restricted area. Federally (USCG / TSA) imposed fines and or consequential damages resulting from a failed TWIC Escort by the Prime or Sub-contractor will be the responsibility of the JAXPORT Prime Contractor regardless of whether it is a direct employee.

### **Federal regulation definition: 33.CFR 101.105**

*Escorting means:* ensuring that the escorted individual is continuously accompanied while within a secure area in a manner sufficient to observe whether the escorted individual is engaged in activities other than those for which escorted access was granted. This may be accomplished via having side-by-side companion or monitoring, depending upon where the escorted individual will be granted access. Individuals without TWIC may not enter restricted areas without having an individual who holds a TWIC as a side-by-side companion.

### **JAXPORT TWIC ESCORTS**

JAXPORT may provide TWIC escorts at Tariff rate with advanced notice (Minimum 24 hours).

After review of the Contractors operation; JAXPORT will decide the number of escorts

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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required to meet the federal regulation ratios of TWIC escort per non-TWIC worker. This will be based on operational requirements.

JAXPORT TWIC Escort Tariff Fees are published in JAXPORT's Tariff Schedule. Current rates are: **Mon.-Fri. 7:00 a.m. until 6:00 p.m.** Subject to two hour minimum \$125.00 first two hours; \$125.00 each additional two-hour block thereafter.

**After 6:00 p.m. until 7:00 a.m. weekends, holidays** Subject to two hours minimum \$250.00; \$125.00 each additional two-hour block thereafter.

### Examples:

1. One TWIC Escort for an 8-hour day is \$501.00 (= 4 TWIC Credentials)
2. One TWIC Escort for 1 5-day work week is \$2505.00 (= 20 TWIC Credentials)

### NOTE:

- All persons entering JAXPORT under TWIC Escort are required to have a tamper-resistant laminated government issued photo identification card on their person. The Identification Card must meet the USCG MTSA standards of 33 CFR 101.515. (State issued paper temporary drivers licenses are not acceptable identification).
- Any violations of the JAXPORT USCG approved Facility Security Plans will result in a Security Violation Hearing and be subject to temporary or permanent denial of access onto JAXPORT Terminals or ability to TWIC Escort.

## 22. ELECTRONIC DATA REQUIREMENTS (E-BUILDER)

### A. General Requirements:

- a) Contractor must purchase at a minimum one (1) user license (see Section 21. H. for details) from JAXPORT and shall provide at a minimum, the following to its staff:
  - i. Computer: Minimum Intel Pentium® 4 Processor 2.4 GHz or equivalent processor with 512MB of RAM; recommended Centrino Duo® Processors 1.6 GHz or equivalent with 2GB of RAM, or higher.
  - ii. Computer Operation System: Windows XP, Windows Vista, or Windows 7
  - iii. Web Browser: Microsoft Internet Explorer 9
  - iv. Work and Spreadsheet Processors: Microsoft Office Word, Excel and Outlook
  - v. Scheduling Software: Microsoft Project or Primavera
  - vi. Internet Service Provider: A reliable ISP in the area of the Project



# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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- vii. Connection Speed/Minimum Bandwidth: DSL, ADSL or T1 Line for transferring a minimum of 3 Mbps Downstream and 512 Kbps Upstream
- b) Contractor shall provide its management personnel assigned to this Project with access to personal computers and the Internet on a daily basis.

### **B. Project Web Requirements; Use of e-Builder Enterprise:**

This project will utilize a web based project management tool called e-Builder Enterprise™. This web based application is a collaboration tool, which will allow all project team members continuous access through the Internet to important project data as well as up to the minute decision and approval status information.

Contractor shall conduct Project controls, outlined by JAXPORT and the Project Manager, utilizing e-Builder Enterprise™. No additional software will be required. Furthermore, the JAXPORT Engineering and Construction department will assist Contractor in providing training of personnel.

Contractor shall have the responsibility for visiting the Project web site on a daily basis, and as necessary to be kept fully apprised of Project developments, for correspondence, assigned tasks and other matters that transpire on the site. These may include but are not limited to: Contracts, Contract Exhibits, Contract Amendments, Drawing Issuances, Addenda, Bulletins, Permits, Insurance & Bonds, Safety Program Procedures, Safety Notices, Accident Reports, Personnel Injury Reports, Schedules, Site Logistics, Progress Reports, Daily Logs, Non-Conformance Notices, Quality Control Notices, Punch Lists, Meeting Minutes, Requests for Information, Submittal Packages, Substitution Requests, Monthly Payment Request Applications, Supplemental Instructions, Construction Variation Directives, Potential Variation Orders, Variation Order Requests, Variation Orders, and the like. All supporting data including but not limited to shop drawings, product data sheets, manufacturer data sheets and instructions, method statements, safety MSDS sheets, Substitution Requests and the like will be submitted in digital format via e-Builder Enterprise™.

### **C. Electronic File Requirements:**

In addition to the standard closeout submittal requirements detailed elsewhere in the Contract Documents, the Contractor shall also submit all closeout documents including all "As-Built Drawings", catalog cuts and Owner's Operation and Maintenance manuals in digital format. All documents (including as-built drawings) shall be converted or scanned into the Adobe Acrobat (.PDF) file format and uploaded to e-Builder Enterprise™.

e-Builder Enterprise™ is a comprehensive Project and Program Management system that JAXPORT has implemented for managing documents, communications and costs between the Contractor, Design Consultants and Owner. E-Builder Enterprise™ includes extensive reporting capabilities to facilitate detailed project reporting in a web-based environment that is accessible to all parties and easy to use.

# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

### D. Central Document Vault:

e-Builder Enterprise™ system includes a central database that maintains all project information and manages project communications amongst team members.

### E. Communication/Correspondence:

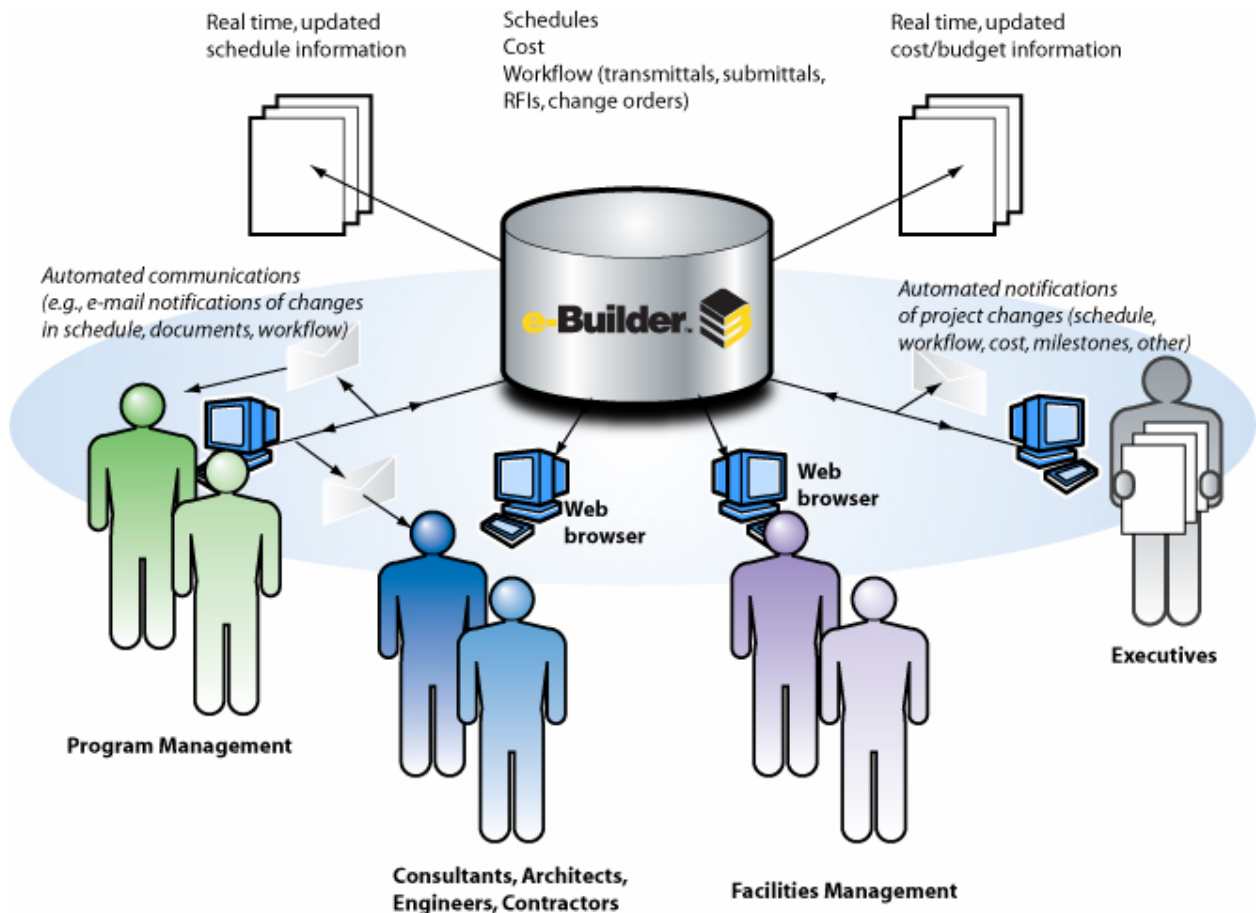
e-Builder provides electronic routable communication forms that provide historical tracking, documentation, and increased accountability of project members.

### F. Project Calendars:

Meetings will be scheduled and maintained centrally on e-Builder Enterprise™.

### G. Reporting:

All of the project and program data including documents, communications and costs are accessible through integrated online reports. These reporting tools are completely configurable by each user. All reports can be exported to Excel for added flexibility.



# SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

## TMT WAREHOUSE #1 RE-ROOF

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### E-BUILDER LICENSING REQUIREMENTS

#### **H. E-Builder Enterprise™ User Licenses:**

Each user license includes full access to e-Builder Enterprise™ including all of the documents and reports mentioned above. Furthermore, each user license provides the e-Builder software as a service (SaS) including:

- All hosting, operation, maintenance and data backup of the e-Builder Enterprise™ software and documents which are maintained in state-of-the-art data centers located throughout the United States.
- Quarterly e-Builder Enterprise™ software enhancements
- Unlimited phone, email and web based support 24-hours:

The cost for licenses that the Contractor will need to acquire will be \$1,495.00 per user/per year or \$124.58 per month as part of their General Conditions fee and shall remain in effect for the duration of the project. For example, if the contract is for 6 months, then the Contractor should be prepared to pay license fees for 8 months, allowing up to sixty (60) calendar days for close out.

The payment must be in the form of a check; payable to JAXPORT for the number of licenses needed by the Contractor and will be collected at the Pre-Construction meeting and/or prior to the Notice-to-Proceed.

Additional licenses can be obtained at any time during the project, by contacting JAXPORT'S Project Manager.

# CONFLICT OF INTEREST CERTIFICATE

**EXHIBIT B**

**JAXPORT Contract No.: C-1631A**

Bidder must execute either Section I or Sections II and III, hereunder, as required by Chapter 112 of the Florida Statutes. Failure to execute either Section I or Section II and Section III may result in the rejection of this bid/Bid.

## SECTION I

I hereby certify that no public officer or employee of JAXPORT has a material financial interest or any business entity of which the officer, director or employee of the officer's, director's or employee's spouse or child is an officer, partner, director, or proprietor or in which such officer, director or employee or the official's, director's or employee's spouse or child, or any combination of them, has a material interest in this contract.

"Material Interest" means direct or indirect ownership of more than 10 percent of the total assets or capital stock of any business entity.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Name of Official (type or print)

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

\_\_\_\_\_  
City and State

\_\_\_\_\_  
Zip Code

# CONFLICT OF INTEREST CERTIFICATE

**EXHIBIT B**

**JAXPORT Contract No.: C-1631A**

## SECTION II

I hereby certify that the following named public official(s) and/or JAXPORT employee(s) having material financial interest(s) (in excess of 10%) in this company have each filed Section III (Public Official Disclosure) with JAXPORT, Office of the Executive Director, 2831 Talleyrand Avenue, Jacksonville, Florida 32206-0005 prior to the time of bid opening.

<b>Name</b>	<b>Title or Position</b>	<b>Date of PUBLIC OFFICIAL DISCLOSURE Filing</b>

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Name of Official (type or print)

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

\_\_\_\_\_  
City and State

\_\_\_\_\_  
Zip Code

# CONFLICT OF INTEREST CERTIFICATE

**EXHIBIT B**

**JAXPORT Contract No.: C-1631A**

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## **SECTION III (Public Official Disclosure)**

JAXPORT requires that a public official who has a financial interest in a bid or contract make a disclosure at the time that the bid or contract is submitted or at the time that the public official acquires a financial interest in the bid or contract. Please provide disclosure, if applicable, with bid.

**Public Official Signature:** \_\_\_\_\_

**Public Official Name:** \_\_\_\_\_

**Public Position Held:** \_\_\_\_\_

**Position or Relationship with Bidder:** \_\_\_\_\_

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

**SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(A),  
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

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THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to           **JAXPORT**          

by \_\_\_\_\_

**(print individual's name and title)**

for \_\_\_\_\_

**(print name of entity submitting sworn statement)**

whose business address is \_\_\_\_\_

\_\_\_\_\_

and (if applicable) its Federal Employer Identification Number (FEIN) is \_\_\_\_\_

(If the entity has no FEIN, include the Social Security Number of the individual signing

this sworn statement: \_\_\_\_\_.)

2. I understand that a “public entity crime” as defined in Paragraph 287.133(1)(g), **Florida Statutes**, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that “convicted” or “conviction” as defined in Paragraph 287.133(1)(b), **Florida Statutes**, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an “affiliate” as defined in Paragraph 287.133(1)(a), **Florida Statutes**, means:

1. A predecessor or successor of a person convicted of a public entity crime; or

2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term “affiliate” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm’s length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a “person” as defined in Paragraph 287.133(1)(e), **Florida Statutes**, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term “person” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

**SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(A),  
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

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6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **(Indicate which statement applies.)**

\_\_\_\_\_ Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent of July 1, 1989.

\_\_\_\_\_ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

\_\_\_\_\_ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **(Attach a copy of the final order)**

**I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.**

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

\_\_\_\_\_  
**(date)**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

\_\_\_\_\_ who, after first being sworn by me, affixed

**(name of individual signing)**

his/her signature in the space provided above on this \_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

\_\_\_\_\_  
**NOTARY PUBLIC**

My commission expires:



# CONTRACTOR CERTIFICATION REGARDING SCRUTINIZED COMPANIES LISTS

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Respondent Contractor Name: _____
Contractor FEIN: _____
Contractor's Authorized Representative Name and Title: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone Number: _____
Email Address: _____

Section 287.135 of the Florida Statutes prohibits agencies from contracting with a company on the Scrutinized Companies with Activities in Sudan List or on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, lists created pursuant to section 215.473, Florida Statutes, for goods or services over \$1,000,000.

As the person authorized to sign on behalf of Respondent, I hereby certify that this company, listed above by "Respondent Contractor Name," complies fully with the law and is not listed on either the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List. I understand that pursuant to section 287.135, Florida Statutes, the submission of a false certification may subject the company to civil penalties, attorney's fees, and/or costs.

So Certified:
Authorized Representative's Signature _____
Date Signed: _____

## **ACKNOWLEDGEMENT AND ACCEPTANCE OF E-VERIFY COMPLIANCE**

### **E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION**

In accordance with the Governor of Florida, Executive Order Number 11-02 (Verification of Employment Status), whereas, Federal law requires employers to employ only individuals eligible to work in the United States; and whereas, the Department of Homeland Security's E-Verify system allows employers to quickly verify in an efficient and cost effective manner;

The Contractor agrees to utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Contractor during the term of the contract. Contractors must include in all subcontracts the requirement that all subcontractors performing work or providing goods and services utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term. The Contractor further agrees to maintain records of its participation and compliance and its subcontractor's participation and compliance with the provisions of the E-Verify program, and to make such records available to JAXPORT upon request. Failure to comply with this requirement will be considered a material breach of the contract.

**By signing below, I acknowledge that I have reviewed, accept and will comply with the regulations pertaining to the E-Verify program.**

---

Company Name

Name of Official (Please Print)

---

Signature of Principal

Title:

Date

# ELECTRONIC DATA REQUIREMENTS (E-BUILDER)

**Exhibit**

**JAXPORT CONTRACT NO.: C-1631A**

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Contractor agrees to the following:

"The E-Builder system is for authorized users only. Unauthorized use of this system is strictly prohibited and may be subject to criminal prosecution. Use of this network constitutes consent to monitoring retrieval and disclosure of any information stored within the system for any purpose including criminal prosecution. Information contained within this system is confidential, intended for the licensed users and may contain information that is proprietary to the user, and/or privileged, confidential and/or otherwise exempt from disclosure under applicable state and federal law. Use by anyone other than the licensed users is not a waiver of any applicable privilege."

---

Signature

---

Company Name

---

Name of Official (type or print)

---

Business Address

---

City and State

---

Zip Code

# BIDDERS MINIMUM REQUIREMENTS

JAXPORT PROJECT NO.: T2018-01

JAXPORT CONTRACT NO.: **C-1631A**

TMT WAREHOUSE #1 RE-ROOF

TALLEYRAND MARINE TERMINAL

DATE: \_\_\_\_\_

Name of Bidder: \_\_\_\_\_

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

The following information is required in connection with your bid under Contract No. **C-1631A**.

1. Bidder is to furnish a complete set of your company's most recent audited financial statements. If no audited financial statements exist, provide firms most recent balance sheet, income statement, and statement of cash flows prepared internally, approved and attested to by your company president or chief executive officer. If the financial statements are more than 180 days old, the firm shall include evidence signed by an officer of the firm as to current financial condition in relation to the most recent reporting period.
2. Bidder is to furnish names and addresses of banks with which your firm maintains accounts, their telephone numbers and persons to contact.

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

3. Bidder is to list all of your current construction contracts.

Owner, Address, Phone #, Contact Name and Email	Work, Scope and Location	Contract Value	Prime Y/N	Percent Complete

4. Are you prepared to accomplish the work in accordance with the project time frame specified on page SC-2 as 150 calendar days?  
\_\_\_\_\_ Yes/No

5. Bidders list names and addresses of principal trade creditors (principal is defined to mean banks, suppliers, vendors, etc.).

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6. Bidder is to list a minimum of five (5) projects similar in nature to the scope of work of this project with a contract value no less than \$ **2,000,000.00** over the past ten (10) years, previously performed as the primary Contractor, and date completed. The owners listed may be contacted for reference checks.

<b>Owner, Address, Phone #, Contact Name and Email</b>	<b>Scope of Work</b>	<b>Date Started &amp; Completed</b>	<b>Prime Y/N</b>	<b>Contract Value</b>

7. Bidder is to list gross receipts from construction contracts during last five (5) years.

<b>Year</b>	<b>Gross Receipts From Construction Contracts</b>	Average Annual Volume: \$
		Est. Annual Capacity: \$
	\$	Largest Job in the last 5 Years:
	\$	
	\$	
	\$	
	\$	Description:

8. Bidder is to list officials and key employees who will be engaged on work.

Name	Address	Position

9. In compliance with the General Conditions, Section II: Bidders must provide the names and resumes of the management team (Project Manager and Project Superintendent) to be assigned to this work at all times during the project with full authority to act for you as required by the General Conditions.

Project Manager: \_\_\_\_\_

Project Superintendent: \_\_\_\_\_

10. Bidder is to list major equipment to be employed on contract.

Equipment Type, Capacity and Manufacturer	Age	Condition	Location

11. Bidder is to provide the number of E-Builder licenses and duration needed for completion of the contract.

# of licenses \_\_\_\_\_ Duration of licenses \_\_\_\_\_

12. Have you determined that each proposed subcontractor is technically and financially able to perform the work to be subcontracted and prepared with equipment and personnel to complete the work within the time allowed by the specifications? \_\_\_\_\_ Yes/No

- 
13. Is your firm prepared and equipped to complete the contract within the time prescribed herein? \_\_\_\_\_ Yes/No
14. By execution below your firm acknowledges that it has reviewed the agreement and shall execute the JAXPORT agreement form without exception or qualification.
15. Has your firm been debarred, suspended or otherwise prohibited from submitting a bid in the past 5 years? \_\_\_\_\_ If yes, provide complete details: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
16. Has your firm been terminated for cause on any project in the past 5 years? \_\_\_\_\_ If Yes, all details: \_\_\_\_\_

**Failure to furnish aforementioned information with the bid package may cause the bid to be non-responsive. Failure to assign the aforementioned management team to the project is a material breach of the contract that may result in termination of the contract in accordance with the General Conditions.**

**BIDDER (Company Name):** \_\_\_\_\_

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

**Typed Name:** \_\_\_\_\_

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

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

**BID FORM**  
**JAXPORT PROJECT NO.: T2018-01**  
**JAXPORT CONTRACT NO.: C-1631A**  
**TMT WAREHOUSE #1 RE-ROOF**  
**TALLEYRAND MARINE TERMINAL**

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**BIDDER'S NAME:** \_\_\_\_\_

The undersigned hereby proposes to furnish all materials, equipment, labor, and supervision for the above identified project, in accordance with the specifications and drawings for Contract No. **C-1631A**, at the following price:

**Scope of Work:** Furnish all labor, materials, equipment and supervision to remove and replace approximately 184,920 total square feet of roof systems at Talleyrand Marine Terminal Warehouse #1, in accordance with contract specifications and drawings.

**LUMP SUM BID: \$** \_\_\_\_\_

(Submission of more than one bid form for the same work by an individual, firm, partnership or corporation under the same or different names and/or any alterations, exceptions or comments contained within the bid form shall be grounds for rejection of the bid)

**Basis of Award:** The Authority reserves the right to award this contract to the bidder whose price is the lowest based on the Lump Sum Bid, subject to the availability of appropriated funds.

The Authority reserves the right to award this contract to the lowest, responsive, responsible bidder, and whose bid is fully conforming to the requirements of the bid documents. Nevertheless, JAXPORT reserves the right to waive informalities in any bid, to reject any or all bids, and to accept the bid which in its judgment will be in the best interest of JAXPORT. JAXPORT will be the sole judge of which Bid will be in its best interest and its decision will be final.

JAXPORT reserves the right to award this contract to the bidder offering the lowest price consistent with meeting all specifications, terms, conditions, delivery requirements set forth on this bid. No award will be made until all necessary inquiries have been made into the responsibility of the lowest conforming bidder and JAXPORT is satisfied that the lowest bidder met all the requirements, is qualified and has the necessary organization, capital and resources required to perform the work under the terms and conditions of the contract. JAXPORT reserves the right to accept or reject any or all Bids, in whole or in part.

The required bid guaranty is attached hereto (see "Supplemental Instructions to Bidders") of the contract documents.



**BID FORM**  
**JAXPORT PROJECT NO.: T2018-01**  
**JAXPORT CONTRACT NO.: C-1631A**  
**TMT WAREHOUSE #1 RE-ROOF**  
**TALLEYRAND MARINE TERMINAL**

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Acknowledgment of the following addenda is hereby made (see "Supplemental Instructions to Bidders"):

Addendum No. 1, Dated: \_\_\_\_\_ Initials: \_\_\_\_\_

Addendum No. 2, Dated: \_\_\_\_\_ Initials: \_\_\_\_\_

Addendum No. 3, Dated: \_\_\_\_\_ Initials: \_\_\_\_\_

Addendum No. 4, Dated: \_\_\_\_\_ Initials: \_\_\_\_\_

See also "Bid Contents and Format" section of the "Supplemental Instructions to Bidders".

---

Name of Contractor

AUTHENTICATION (see "Supplemental Instructions to Bidders")

---

Firm

---

Business Address

City

State

Zip Code

---

Mailing Address, if different from above

---

Authorized Signature

Date Executed

---

Typed Name

Title

---

E-Mail Address

---

Telephone Number

Facsimile Number

---

Company Federal Tax I.D. No.

Company's Business License No.

**BID BOND FORM**  
**JAXPORT PROJECT NO.: T2018-01**  
**JAXPORT CONTRACT NO.: C-1631A**  
**TMT WAREHOUSE #1 RE-ROOF**  
**TALLEYRAND MARINE TERMINAL**

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KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,  
\_\_\_\_\_ as  
Principal and \_\_\_\_\_ as  
Surety, are hereby held and firmly bound unto JAXPORT, in the sum of  
\_\_\_\_\_ dollars (\$\_\_\_\_\_) as liquidated damages for payment  
of which, well and truly to be made, we hereby jointly and severally bind ourselves, our  
heirs, executors, administrators, successors and assigns.

The Conditions of the above obligation are such that whereas the Principal has  
submitted to JAXPORT, a certain Bid attached hereto and hereby made part hereof, to  
enter into a Contract Agreement in writing, for construction of  
\_\_\_\_\_.

NOW THEREFORE,

- (a) If said Bid shall be rejected or withdrawn as provided in the Instructions  
to Bidders attached hereto or, in the alternative,
- (b) If said Bid shall be accepted and the Principal shall sign and deliver a  
formal contract document in the form of the Contract Agreement attached  
hereto (properly completed in accordance with said Bid) and shall furnish  
the specified Bonds required by Section V of the Contract Documents in  
the amount equal to one hundred percent (100%) of the base bid within  
ten (10) consecutive days after the receipt of said contract,

thence this obligation shall be void, otherwise, it shall remain in force and effect; it  
being expressly understood and agreed that the liability of the Surety for any and all  
claims hereunder in no event shall exceed the amount of this obligation as herein  
stated.

The Surety, for value received, hereby stipulates and agrees that the obligations  
of said Surety and its bond shall be in no way impaired or affected by an extension of

**BID BOND FORM**  
**JAXPORT PROJECT NO.: T2018-01**  
**JAXPORT CONTRACT NO.: C-1631A**  
**TMT WAREHOUSE #1 RE-ROOF**  
**TALLEYRAND MARINE TERMINAL**

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the time within which such Bid may be accepted, and said Surety does hereby waive notice of any extension.

The sum herein stated shall be due and payable to JAXPORT, and the "Surety" herein agrees to pay said sum immediately upon demand of said JAXPORT in good and lawful money of United States of America; as liquidated damages for failure thereof of said "Principal".

IN WITNESS WHEREOF, the said \_\_\_\_\_,  
As "Principal" herein, has caused these presents to be signed in its name by its \_\_\_\_\_ and attested by its \_\_\_\_\_ under its corporate seal, and the said \_\_\_\_\_ as "Surety" herein, has caused these presents to be signed in its name by its \_\_\_\_\_ and attested by its \_\_\_\_\_ under its corporate seal, this \_\_\_\_\_  
Day of \_\_\_\_\_ A.D., 20\_\_.

\_\_\_\_\_  
AS PRINCIPAL (SEAL)

ATTEST:

\_\_\_\_\_  
Its \_\_\_\_\_

**Signed, Sealed and Delivered  
In the presence of:**

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

Its \_\_\_\_\_  
By \_\_\_\_\_  
AS SURETY

## LOCAL AGENCY PROGRAM ANTICIPATED DBE PARTICIPATION STATEMENT

Form No. 275-030-12

1. FDOT LAP AGREEMENT#	2. FDOT LAP AGREEMENT AMOUNT	3. LOCAL AGENCY CONTRACT (PRIME)#.	4. LOCAL AGENCY'S NAME  Jacksonville Port Authority
5. PRIME CONTRACTOR'S NAME			6. FEID NUMBER - PRIME CONTRACTOR)
7. CONTRACT DOLLAR AMOUNT			8. FEID NUMBER - (LOCAL AGENCY) 59-3730270
9. IS THE PRIME CONTRACTOR A FLORIDA-CERTIFIED DISADVANTAGED BUSINESS ENTERPRISE (DBE)?	YES <input type="checkbox"/> NO <input type="checkbox"/>	10. IS THE WORK OF THIS CONTRACT CONSTRUCTION <input type="checkbox"/> OR MAINTENANCE <input type="checkbox"/> OTHER? _____	
11. REVISION (Y/N)? _____ IF YES, REVISION NUMBER _____			

12. ANTICIPATED DBE SUBCONTRACTORS (BELOW):				
	DBE SUBCONTRACTOR OR SUPPLIER	TYPE OF WORK/SPECIALTY	DOLLAR AMOUNT	PERCENT OF CONTRACT DOLLARS
A				
B				
C				
D				
E			11A TOTAL DOLLARS TO DBE'S \$ 0.00	11B TOTAL PERCENT OF CONTRACT % 0.0

### SECTION TO BE COMPLETED BY PRIME CONTRACTOR

13. NAME OF SUBMITTER	14. DATE	15. TITLE OF SUBMITTER	
16. EMAIL ADDRESS OF PRIME CONTRACTOR/SUBMITTER		17. FAX NUMBER	18. PHONE NUMBER

### SECTION TO BE COMPLETED BY LOCAL AGENCY

19. SUBMITTED BY	20. DATE	21. TITLE OF SUBMITTER	
22. EMAIL ADDRESS OF SUBMITTER		23. FAX NUMBER	24. PHONE NUMBER

**NOTE: THIS INFORMATION IS USED TO TRACK AND REPORT ANTICIPATED DBE PARTICIPATION IN ALL FEDERALLY- FUNDED FDOT CONTRACTS. THE ANTICIPATED DBE AMOUNT IS VOLUNTARY AND WILL NOT BECOME A PART OF THE CONTRACTUAL TERMS. THIS FORM MUST BE SUBMITTED AT THE PRE- CONSTRUCTION. FDOT STAFF FORWARDS THE FORM TO THE EQUAL OPPORTUNITY OFFICE.**

### THE FOLLOWING SECTIONS ARE FOR FDOT LAP USE

DISTRICT	LAP NAME	DATE TO EOO OFFICE (ELECTRONICALLY)	EXECUTED DATE (LAP AGREEMENT)	EXECUTED DATE (BETWEEN LOCAL AGENCY AND PRIME)	PRE-CONSTRUCTION CONFERENCE DATE.

## ATTACHMENT NO. 1

# *How to Submit Your Bid Response in E-Builder*




After reviewing the bid package invitation, use the Response Form tab to submit your bid response.

### To submit your proposal:

1. [Access](#) the bid package.
2. Click the **Response Form** tab.
3. On the **Step 1: Bid Form** tab, enter your pricing on the bid form line items.


Ensure that you provide pricing at the level of detail required by the bid manager (if applicable). Some line items may be lump sum, and others may require quantities and unit prices.

- If there are areas that do not pertain to your trade, enter a zero (0) value in that line.
- The Summary box at the top of the page maintains a running total of your entries for reference.

4. Click  (Save). Ensure that your work is saved periodically.
5. *Optional:* To export the bid items to a spreadsheet that you can customize or that you can share with your team, click  (Download). After updating the spreadsheet, click  (Upload) to re-import it.
6. On the **STEP 2: Response Documents** tab, click **Attach Documents**, and upload any supporting document needed to support your bid.
7. On the **STEP 3: Additional Required Info** tab, complete any additional questions or qualification statements that have been established by the bid manager. If any addenda have been issued, you are required to acknowledge receipt of the addenda on this page before submitting your bid.
8. Review the entire Response Form and click **Submit**.
9. When prompted, enter your e-Builder portal password and click **Submit Bid**.

The date and time that you submitted your bid is stamped on your Response Form. You will also receive an email confirmation.

### Additional Notes

- *After the bid due date/time has passed, the Submit button will be disabled. It is critical that you complete the entire process prior to the cut-off time. The system will not permit you to submit your proposal or bid after the deadline regardless of where you are in the process. As stated, the Submit button is systematically disabled promptly at the deadline and JAXPORT is unable to see anything you have uploaded prior to the bid due date/time. No late submissions will be permitted or accepted. Please plan accordingly.*
- If the bid manager adds or changes a bid item, or publishes an addendum, your bid will be set back to a Draft status. You will receive an email notification and will be required to reconfirm your bid and resubmit.
- When you need to step away from entering the quote, click  (Save). It is recommended that you save every 15 minutes. This will ensure that your changes are saved.
- If there are areas that do not pertain to your trade, enter a zero (0) value in that line item.
- If you have your qualifications in Word® or another program, copy and paste them into the qualifications.
- It is required that you acknowledge all the addenda, even if they do not pertain to your trade.

## **ATTACHMENT NO. 1**

- It is recommended that you submit your quote at least 60 minutes before the due time so that you can rectify any errors. To submit the proposal, you must complete all the fields and acknowledge the addenda items.



**CONTRACT RELATED DOCUMENTS**

**FOR**

**TMT WAREHOUSE # 1 RE-ROOF**

**Project No.: T2018-01**

**Contract No.: C-1631A**

**TALLEYRAND MARINE TERMINAL**

# CONTRACT RELATED DOCUMENTS

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# GENERAL CONDITIONS

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# GENERAL CONDITIONS

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## SECTION I.: PRELIMINARY MATTERS

### 1. Definitions

- a. Owner: The Owner is JAXPORT or its designee authorized in writing. The words "Owner", "JAXPORT", "JPA" and "Authority" shall mean the same and are used interchangeably.

Owner Representative/Project Manager: The Owner will designate an individual or firm to be Project Manager for all work to be accomplished under the contract. All instructions and correspondence to the Contractor will be issued by the Project Manager and all requests, invoicing, and correspondence from the Contractor will be directed to the Project Manager. The Project Manager will interpret the terms and conditions of the contract and be the judge of the performance of the Contractor on behalf of the Owner.

All correspondence relating to the contract shall be addressed to:

**MARVIN GRIEVE, DIRECTOR, PROJECT MANAGEMENT**  
JACKSONVILLE PORT AUTHORITY  
ENGINEERING SERVICES  
POST OFFICE BOX 3005  
JACKSONVILLE, FL 32206-0005

- b. Inspector: The Project Manager may appoint such Inspectors as he desires. They shall be authorized to inspect all work done, and materials furnished. They shall be authorized to call to the attention of Contractor personnel any failure of the Work or materials to conform to the specifications and contract. They shall have the authority to reject nonconforming materials and workman-ship, and construction methods or procedures which produce substandard results and to take appropriate action to avoid any dangerous or unsafe conditions. The presence of the Inspector shall in no way relieve the responsibility of the Contractor to comply with and perform all of the obligations specified in the contract documents. The Inspectors shall not be authorized to approve, direct, or establish any methods or procedures used by the Contractor in constructing the project. The Inspector is not authorized to approve any deviation from the contract documents nor any substitutions of materials or equipment.
- c. Approval: Where utilized in this contract, "approval" shall constitute a review by the Owner only to satisfy itself as to the general conformance of the subject as to the intent of the contract. Approval by the Owner does not indicate any responsibility of the Owner towards the design, materials, substitutions, dimensions, fit, function, strength, finish or any other quantity, capacity, or quality of the subject at hand. Approval by the Owner shall not relieve the Contractor from its responsibility for full compliance with the contract requirements, at his sole expense.

## **SECTION I.: PRELIMINARY MATTERS (...CONTINUED)**

---

- d. Work: Where used in these contract documents, the word "Work" shall include all actions, materials, tools, equipment and all appliances, machinery, appurtenances and engineering (when specified), and labor necessary to perform and complete the contract, and such additional items not specifically indicated or described which can be reasonably inferred as belonging to the scope and intent of the contract. The terms "Work" and "Project" shall mean the same and may be used interchangeably.
- e. Consultant: Where utilized by the Owner, the consulting firm or firms engaged by the Owner to provide professional services in conjunction with the planning, design, and construction of the Project will interpret the technical specifications and drawings, and will render judgments and decisions on matters of a technical nature as pertains to design and construction of the Project. The terms "Architect," "Architect/Engineer," "A/E," and "Engineer" shall all be construed to refer to the Consultant(s).
- f. Contractor: The individual, firm, company or corporation contracting with JAXPORT for performance of Work and/or furnishing of materials for construction of the Project is defined in the contract documents.
- g. Certificate of Substantial Completion: A written document representing a mutually agreed upon status of the progress of the Work as described in the contract documents, or a specified part thereof, between the Owner, the Contractor, and the Consultant whereby the Work is sufficiently complete and can be utilized for its intended purpose/ occupancy by the Owner without unreasonable inconvenience. The Owner reserves the right to make the final decision as to the status of the Work in reference to this definition.

### **2. Contract Documents**

- a. General: The contract documents shall consist of the bidding documents, contract forms, conditions of the General Conditions, specifications, drawings, all addenda issued prior to the execution of the Agreement, the approved Project construction schedule(s), all amendments, change orders, and Engineer's response to Contractor's "Request for Information (RFI)" of the contract documents relating to construction issued by the Owner's representative. These form the contract and what is required by any one shall be binding as if required by all. The intention of the contract documents is to include all labor, materials, equipment and other items necessary for the proper execution and completion of the Work so as to result in a fully operational and functional product. Any work, labor, equipment and materials that may reasonably be inferred from the specifications or drawings as being required to produce the intended result shall be supplied whether or not it is specifically called for in the contract documents. The contract Agreement shall be signed in duplicate by the Owner and the Contractor, unless otherwise stated.

## **SECTION I.: PRELIMINARY MATTERS (...CONTINUED)**

---

- b. Governing Law: The terms and conditions of this contract will be governed by the laws of the State of Florida, and venue for any action shall be in Jacksonville, Florida.
- c. Conflicts and Discrepancies: The Contractor shall take no advantage of any error or omission which he might discover in the plans or specifications but shall, within 5 working days, notify the Owner of such discovery, who will then make such corrections and interpretations as it deems necessary for reflecting the actual spirit and intent of the plans and specifications. Failure to make notice within 5 days to Owner by the Contractor will result in work performed at Contractor's own risk and Owner will have no liability for any claim resulting therefore.

The Owner, after receipt of written notice by the Contractor in resolving conflicts, errors, and discrepancies between the various contract documents generally, will give precedence in the following order:

- Approved Change Orders
- Addenda issued prior to receipt of bids
- The executed Agreement Form
- Owner's response to Contractor's Request for Information (Form RFI)
- Supplemental Instructions to Bidders
- Special Conditions of the specifications
- General Conditions of the specifications
- Technical specifications
- Drawings
- Other documents as listed on the Agreement between Owner and Contractor, Form FA
- Bid

Figure dimensions on drawings shall govern over scale dimensions, and detailed drawings shall govern over general drawings.

### **3. Subcontracting or Assigning of Contract**

- a. The Contractor shall not subcontract more than 25 percent of the total value of jobsite Work, exclusive of the cost of all installed materials and equipment, without the prior written approval of the Owner. Qualifications of subcontractors may be required in the same manner as provided for the Contractor elsewhere in this contract (see "Instructions to Bidders").
- b. The Contractor agrees that it shall not subcontract, assign, delegate, or otherwise dispose of the contract, the duties to be performed under the contract, or the monies to become due under the contract without the Owner's prior written consent.
- c. Contracts between the Contractor and subcontractors or suppliers shall be in accordance with the terms of this agreement as applicable.

## **SECTION II.: THE WORK (...CONTINUED)**

---

- d. Subcontracted work volume may reflect the DBE Participation goals described in the "Instructions to Bidders".

### **4. Separate Contracts**

The Owner reserves the right to let other contractors perform work without conflict on the same or adjacent property. The Contractor shall cooperate and coordinate with any such other contractor(s).

### **5. Non-discrimination Provisions**

The Contractor, upon execution of the Project agreement, certifies that it meets and agrees to the following provisions:

- a. The Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, marital status or disability nor will it discriminate in hiring nor fail to make reasonable accommodation for qualified handicapped employees.
- b. The Contractor agrees to comply with all applicable federal, state and local laws, including the Civil Rights Act 1964, as amended. The Equal Employment Opportunity Clause in Section 202, Paragraphs 1 through 7 of Executive Order 11246, as amended, relative to Equal Employment and the implementing rules and regulations of the Office of Federal Contract Compliance Programs are incorporated herein by specific reference. The Affirmative Action Clause in Section 503 of the Rehabilitation Act of 1973, as amended, relative to Equal Opportunity for the Disabled is incorporated herein by specific reference. The Affirmative Action Clause in 38 U.S.C. Section 2-12 of the Vietnam Veterans' Readjustment Assistance Act of 1974, relative to Equal Employment Opportunity for the special disabled veteran and veterans of the Vietnam era, is incorporated herein by specific reference.
- c. An entity or affiliate who has been placed on the State of Florida's discriminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.  
  
To view a current list, visit:  
[http://dms.myflorida.com/business\\_operations/state\\_purchasing/vendor\\_information/convicted\\_suspended\\_discriminatory\\_complaints\\_vendor\\_lists](http://dms.myflorida.com/business_operations/state_purchasing/vendor_information/convicted_suspended_discriminatory_complaints_vendor_lists)
- d. The Contractor agrees that if any of the obligations of this contract are to be performed by a subcontractor, the provisions of this Section I.5 shall be incorporated into and become a part of the subcontract.

## **SECTION I.: PRELIMINARY MATTERS (...CONTINUED)**

---

### **6. Wage and Employment Laws**

- a. The Contractor shall observe and comply with Federal, State, and local laws relating to wages, rates of pay, and employment requirements, including applicable E.E.O. and Affirmative Action requirements.
- b. ARTICLE 1, SECTION 6, OF THE CONSTITUTION OF THE STATE OF FLORIDA RECOGNIZES THAT THE RIGHTS OF PERSONS TO WORK SHALL NOT BE DENIED ON ACCOUNT OF THE MEMBERSHIP OR NON-MEMBERSHIP IN ANY LABOR UNION OR LABOR ORGANIZATION.

### **7. Royalties and Patents**

The Contractor shall pay all royalties and license fees. The Contractor shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.

### **8. Right to Audit**

The Contractor agrees to provide JAXPORT or any of their authorized representative's 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. JAXPORT will also be afforded access to all of the Contractor's records, including but not limited to payroll records, training books, correspondence, instructions, drawings, receipts, vouchers, memoranda and similar data relating to this Contract, and the Contractor will preserve all such records for (3) three years, or for such longer periods a may be required by law, after final payment.

The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor shall pay all royalties and license fees. The Contractor shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.

# GENERAL CONDITIONS

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## SECTION II.: THE WORK

### 1. Contractor's Responsibility.

- a. Until substantial completion or final acceptance of the Work (whichever comes first) by the Owner, the Work shall be under the complete care, custody, and control of the Contractor. The Contractor shall assume all risks of loss during its period of custody.
- b. The Contractor shall supervise and direct the Work using its best skill, judgment, and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures, including implementation of the Contractor's Quality Control Program, the prudent exercise of all reasonable safety precautions, and for coordinating all portions of the Work under the contract to effect a timely completion, and resolving any delay or damages between itself and any other Contractor without involvement of the Owner.
- c. Unless otherwise specifically noted, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.
- d. The Superintendent shall maintain one complete set of the contract documents including approved shop drawings on the jobsite at all times that Work is underway.
- e. The Contractor warrants to the Owner that all materials and equipment incorporated in the Work will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects, and in conformance with the contract documents. All Work not so conforming to these standards may be considered defective. In the event Work is rejected by the Project Manager, the Contractor shall correct, remove, and/or reconstruct such Work to conform to contract requirements at his sole expense including any testing or engineering costs necessitated thereby.
- f. The Contractor shall pay all sales, consumer use, and other similar taxes required by laws and secure all permits, fees, and licenses necessary for the execution of the Work.
- g. The Contractor shall promptly give all notices and comply with all laws, ordinances, permits, rules and regulations, order, and any public authority bearing on the performance of the Work, and shall notify the Owner if the drawings and specifications are at variance therewith, failure to do so shall result in Contractor's responsibility for any losses or damages associated with the work.
- h. The Contractor shall be responsible for the acts and omissions of all its employees, all subcontractors, suppliers, agents and employees and all other

## **SECTION II.: THE WORK (...CONTINUED)**

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persons performing any of the Work under a contract with, or under the supervision of the Contractor.

- i. Contractor is required to record daily, the progress of the project and submit electronically in E-Builder; daily progress reports to the OWNER including information on the subcontractor's work, and the percentage of completion.
- j. Contractor is required to and hereby agrees that it will exert every reasonable and diligent effort to assure that all labor employed by the Contractor and its sub-contractors for Work on the Project shall work in harmony with and be compatible with all other labor being used by building and construction contractors now or hereafter on the site of work covered by this contract.

Contractor further agrees that this requirement will be included in all subcontracts of the subcontractor as well as in the Contractor's own contract provided, however, that this provision shall not be interpreted or enforced so as to deny or abridge on account of membership or non-membership in any labor union or labor organization, the right of any person to work as guaranteed by Article I, Section 6 of the Florida Constitution.

- k. Submittal Procedures.

Contractor shall submit each shop drawing Submittal for review electronically in E-Builder.

Preliminary Shop Drawing Data: Within 20 days after the Award of the Contract the Contractor shall submit to the Project Manager a complete listing of manufacturers for all items for which shop drawings are to be submitted.

Shop Drawing Submittal Schedule: Within 30 days after the Notice to Proceed, the Contractor shall submit to the Project Manager a complete schedule of shop drawing submittals fixing the respective dates for submission, the beginning of manufacture, testing, and installation of materials, supplies and equipment, noting those submittals critical to the progress schedule.

Submittal Log: Contractor shall provide an accurate updated log of submittals maintained by the Contractor and subject to review by JAXPORT at each scheduled progress meeting.

When reviewed by JAXPORT each of the shop drawings will be identified as having received such review, being so labeled and dated. Shop drawings labeled "REJECTED" will be returned to the Contractor for correction and re-submittal with the required correction indicated on the shop drawing or listed on a "Shop Drawing Review sheet".

If submitted drawings or schedules show a departure or variation from the Contract Requirements which are in the interest of JAXPORT and to be so



## **SECTION II.: THE WORK (...CONTINUED)**

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minor as not to involve a change in Contract Price or time for performance, JAXPORT may return the reviewed drawings without noting an exception.

Re-submittals will be handled in the same manner as first submittals. On re-submittals, the Contractor shall direct specific attention on the transmittal and on re-submitted shop drawings to revisions other than the corrections requested by the Project Manager on previous submissions. The Contractor shall make any corrections required by the Project Manager.

The Project Manager and JAXPORT'S Engineer of Record will review a Submittal/re-submittal a maximum of two (2) times after which the cost of review will be borne by the Contractor at JAXPORT'S Project Manager and Engineer of Record's standard hourly rate. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor, and will be considered "Rejected" until properly resubmitted.

If catalog sheets or prints of manufacturers' standard drawings are submitted as Shop Drawings, any additional information or changes on such drawings shall be typewritten or lettered in ink.

The minimum size for shop drawings shall be 11" X 17". Each shop drawing shall be clear, thoroughly detailed and shall have listed on it all Contract Documents references, drawing number(s), specification section number(s) and the shop drawing numbers of related work. Shop drawings must be complete in every detail, including location of the Work. Materials, gauges, methods of fastening and spacing of fastenings, connections with other work, cutting, fitting, drilling and any and all other necessary information per standard trade practices or as required for any specific purpose shall be shown.

Where professional calculations and/or certification of performance criteria of materials, systems, and or equipment are required, the Project Manager is entitled to rely upon the accuracy and completeness of such calculations and certifications submitted by the Contractor. Calculations, when required, shall be submitted in a neat, clear and easy format to follow.

Contractor shall keep one set of Shop Drawings marked with Project Manager's and/or Engineer of Record's approval at the job site at all times.

- I. Shop Drawings and Samples.
  - (1) The Contractor shall furnish all samples and shop drawings as required for approval by the Owner. Details, number of copies required, and format will be mutually agreed upon at the Preconstruction Conference.
  - (2) Approval of shop drawings, samples, materials, substitutions, or equipment deviating in any dimension, fit, strength, finish, capacity, or other quality shall not relieve the Contractor from full compliance with the contract requirements, at its sole expense,

## **SECTION II.: THE WORK (...CONTINUED)**

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unless such exceptions, deviations, dimensions, substitutions, etc. are specifically identified and marked for attention on the shop drawing submittals and signed by the Contractor at time of submission. Approval of such specifically marked shop drawings shall permit the altered or substituted Work provided that any change in the contract price occasioned thereby is accomplished per Section III, "General Conditions". The Contractor shall bear full responsibility for coordinating proposed deviations, substitutions, dimensional changes and the like with all other affected trades, and for the full cost of any other subsequent modifications or changes to the Work necessitated thereby.

- (3) The Contractor and if applicable, the Subcontractor(s) shall thoroughly check, coordinate, stamp, sign and approve all shop drawings prior to submittal to the Owner for review. If it appears to the Project Manager that such review, coordination, and approval has not been done or is not adequate, the shop drawings will be returned to the Contractor without action. The Contractor shall bear the sole responsibility for performance of Work or ordering requiring shop drawing approval, in advance of such approval.
- (4) THE CONTRACTOR SHALL BEAR THE SOLE RESPONSIBILITY FOR ANY DELAYS TO THE WORK OCCASIONED BY OR RESULTING FROM ITSELF OR ITS AGENTS, SUBCONTRACTORS, SUPPLIERS, OR EMPLOYEES' DELAY OR FAILURE TO FURNISH COMPLETE, CORRECT, COORDINATED SHOP DRAWINGS IN A TIMELY MANNER. DELAYS INCURRED DUE TO REJECTION OF INCOMPLETE AND/OR NON-CONFORMING SHOP DRAWINGS SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR, AND NO ADDITIONAL CONTRACT COST OR TIME SHALL BE ALLOWED ON ACCOUNT OF SUCH DELAYS.

- m. The Owner will furnish such information as is available at the time of contract award as to control points, benchmarks, recent surveys, or soundings concerning the worksite, and adjacent facilities, utilities, or structures. The Contractor, not the Owner, shall be responsible for any and all verifications required, extensions of survey control for the Work, ancillary surveying, location of centerlines, baselines, additional benchmarks, and any other measurements necessary for construction or design purposes, as appropriate.

Any markers or stakes set by the Owner or its representatives for control, inspection, or reference purposes during construction shall be preserved and left intact and undisturbed by the Contractor, unless in the way of construction. Prior to removal or relocation of any such marker by the Contractor, when necessary, the Contractor shall so inform the Owner's representative at the jobsite. Any such markers negligently destroyed or

## **SECTION II.: THE WORK (...CONTINUED)**

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disturbed by the Contractor shall be restored at his expense.

### **2. Execution of the Work.**

- a. General. The Contractor shall preserve and protect from damage all property along the line of work, or which is in the vicinity of, or is in any way affected by the Work, the removal or destruction of which is not called for by the plans. This applies, but is not necessarily limited to public and private property, public and private utilities, trees, shrubs, signs, monuments, fences, guardrails, pipe and underground structures, wharves, railroads, bridges, roadways (except natural wear and tear resulting from legitimate use thereof by the Contractor etc.), and whenever such property is damaged due to the activities of the Contractor, it shall be immediately restored to a condition similar or equal to that existing before such damage or injury was done by the Contractor, and at his own expense, or he shall make good such damage or injury in a manner acceptable to the Owner. In case of failure on the part of the Contractor to restore such property or to make good such damage or injury, the Owner may upon 48 hours' notice proceed to repair, rebuild or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any monies due or which may become due the Contractor under the contract.
- b. Superintendence. The Contractor shall provide a qualified Superintendent on the Work throughout its progress, and shall specifically require that the Superintendent be present on the site at all times when any Work is being performed by itself or any of its subcontractors. Qualified Superintendent shall have a minimum of 10 years of construction experience, five of which are on similar projects in that capacity. All communications given to the Superintendent shall be as binding as if given to the Contractor. Once assigned, the Contractor's Superintendent shall not be replaced without prior written notice to the Owner. The Owner reserves the right to reject the assignment or reassignment of the Contractor's Superintendent. The Superintendent shall have full authority to execute the orders or directions of the Project Manager and to obtain or supply promptly any materials, tools, equipment, labor, and incidentals which may be required. The Contractor must provide on-site supervision at all times when work is being done. If, in the event that it is absolutely necessary for the Superintendent to be absent from the site, the Contractor shall notify the Project Manager, in writing, the assignment of the person on-site who will act in its place and be responsible for the project. This person must be an employee of the Contractor. Such superintendence shall be furnished regardless of the amount of Work sublet.
- c. Design Engineering. Where design engineering is the responsibility of the Contractor, the Contractor must assure that the engineer who certifies the design is appropriately authorized to do so according to the regulations and laws of the local community and the State of Florida.
- d. The Contractor shall have a responsible person available reasonably near the

## **SECTION II.: THE WORK (...CONTINUED)**

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worksite and "on-call" on a 24-hour basis, 7 days a week; in order that it may be contacted in emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that might arise. The designated individual shall have full authority to take actions necessary to resolve such situations as previously described. For compliance with this requirement the furnishing of a local telephone number (non-toll) where such person can be directly reached will suffice.

- e. Except in the interest of safety or protection of persons, or the Work, or property at the site or adjacent thereto, and except as may otherwise be indicated in the "Special Conditions", all Work at the site shall be performed during regular working hours, and Contractor shall not permit overtime Work or the performance of Work on Saturday, Sunday, or any legal holiday without Owner's consent given after prior written notice to Owner's Project Manager. In general, all Work shall be performed during daylight hours. For special operations, night Work may be done if so authorized in writing. No night Work shall be performed unless adequate artificial lighting has been provided and has been approved by the Inspector.
- f. The Contractor shall not begin new items of Work to the prejudice of Work already started. The Owner may require the Contractor to finish a section or area on which Work is in progress before Work is started on an unrelated or additional section or area, unless the Contractor can clearly demonstrate to the Project Manager on a sound, rational, and convincing basis that its intended action is in the best interest of the Project.
- g. The Contractor shall at all times conduct the Work in such a manner and in such sequence as to insure the least practicable interference with traffic. The Contractor's vehicles and other equipment shall be operated in such a manner that they will not be a hazard or hindrance to the public. Materials stored on the worksite shall be placed so as to cause as little obstruction as possible.
- h. The Contractor shall arrange his work and dispose of his materials so as not to interfere with the operations of other contractors engaged upon adjacent work, and to join his work to that of others in a proper manner in accordance with the spirit of the plans and specifications, and to perform his work in the proper sequence in relation to that of other contractors, all as may be directed by the Owner. Each contractor will be held responsible directly to the Owner or any other contractor for any damage done by him, his agents, or his subcontractors to the work performed by another contractor. The Owner shall not be liable for damages caused between contractors.
- i. The Contractor shall so conduct his operations and maintain the Work in such condition that adequate drainage will be in effect at all times. Existing functioning storm sewers, gutters, ditches, and other run-off facilities shall not be unnecessarily obstructed.
- j. Heavy equipment shall not be operated close enough to new or previously

## **SECTION II.: THE WORK (...CONTINUED)**

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existing structures to cause damage, disturbance or displacement.

- k. The Contractor shall provide qualified and acceptable personnel to organize, schedule, manage, layout, and construct the Work as required by the contract documents and shall assure that all Project executives, superintendents, and foremen employed by it on this Project are competent, knowledgeable in the Work, conscientious, attentive to the Project, and reliable. All workers must have sufficient skills and experience to properly perform the work assigned them. Welder qualification records will be furnished by the Contractor at no cost to the Owner. All workers engaged on specialty work or detailed (highly skilled) work, or in any recognized trade shall have had sufficient experience in such work to perform it properly and satisfactorily and to operate the equipment involved, and shall make due and proper effort to execute the Work in the manner prescribed in the specifications, or the Owner may take appropriate action as prescribed below.

The Contractor shall at all times maintain good discipline and order at the site. Whenever the Project Manager has determined that any person employed by the Contractor is incompetent, unfaithful, malevolent, intemperate, disorderly or insubordinate, such person shall, upon notice to the Contractor's Superintendent, be promptly removed from the Work and shall not again be employed on it except with the written consent of the Project Manager. Should the Contractor upon due notice fail to remove such person or persons, the Owner may withhold all monies which are or may become due to the Contractor, or may suspend the Work until such orders to remove said person or persons have been accomplished as set forth in Article 8(i). The Contractor shall protect, defend, indemnify and hold the Owner, its agents, officials, and employees harmless from any and all claims, actions or suits arising from such removal, discharge, or suspension of unsuitable employees of the Contractor.

- l. The Contractor shall at all times keep the premises free from accumulation of waste materials and rubbish caused by the Work, and at the completion of the Work shall remove all rubbish, waste, salvage and surplus materials which resulted from the Work. The Contractor shall also remove all tools, construction equipment and machinery and shall leave the Project "broom clean", unless otherwise specified. All surplus and salvage material shall become the property of the Contractor unless otherwise specified in the contract documents.
- m. The Owner shall have the authority to suspend the Work wholly, or in part, for such period or periods as may be deemed necessary due to unsuitable weather or other conditions which are considered unfavorable for the prosecution of the Work; to accommodate actions, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given, or to comply with any or all provisions of the contract. Such suspension shall be ordered in writing by the Project Manager giving the Contractor, in detail, the reasons for the suspension and under what

## **SECTION II.: THE WORK (...CONTINUED)**

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circumstances or conditions the Work may be permitted to resume.

Whenever the Work is suspended by the Owner for reasons other than the fault of the Contractor, an extension of time for completion of the Work due to such suspension may be made as allowed for in other sections of this contract.

Time extension shall be the Contractor's sole remedy unless otherwise agreed upon in writing prior to the commencement of work.

- n. The Contractor shall not suspend operations or remove equipment or materials necessary for the completion of the Work without the prior permission of the Owner.
- o. Cooperation with Port Operations.
  - (1) The Contractor understands that the Work will be performed on, or in the near vicinity of an operating marine terminal. The Contractor acknowledges that ship schedules and terminal operations take precedence over the Contractor's activities. Contractor shall provide upon request, manpower and equipment loading schedule for the project.
  - (2) The Owner will, insofar as possible, schedule berthing of ships, and general terminal operations, so as not to interfere with the Work of the Contractor. The Owner will review the schedule presented by the Contractor at the Preconstruction Conference and advise the Contractor of any known conflicts that may exist with terminal operations. The Contractor shall adjust its schedule to avoid those conflicts and ensure that its activities will not interfere or cause interference with terminal operations, at no cost to the Owner.
  - (3) Considering that ship schedules are not precise due to weather and delays at other ports, the Contractor will be notified a minimum of 24 hours prior to the expected arrival of a ship that will be berthed in, or affect the area of the Contractor's Work. The Contractor may be required to curtail its activities in the area affected to the satisfaction of the Project Manager until the construction site is available again at no cost to the Owner.
  - (4) The Contractor's Superintendent, however, during the course of the Work, shall contact the Terminal Director designee by telephone or personal contact, twice each day (early morning and late afternoon) concerning ship traffic schedules and cargo handling activities so as to minimize Contractor's "downtime" and improve his scheduling efforts.
  - (5) When the Work is stopped by the Authority for its convenience, or vessels are berthed in locations so as to impede the Contractor's Work, the total number of calendar days of delay shall be added to the time allowed for the completion of the Project which shall

## **SECTION II.: THE WORK (...CONTINUED)**

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be the sole remedy available to the Contractor.

- (6) When it is necessary that a change or interruption be made in terminal operations in order to carry out a construction operation, the Contractor shall submit a request electronically in E-Builder with full details including a pre-approved schedule at least 72 hours prior to the time the change or interruption is required. The Owner shall make all reasonable efforts to comply with the request of the Contractor. The Contractor shall not proceed with such Work until it has received written notice from the Owner to so proceed.
- p. Failure of Contractor to Maintain Satisfactory Progress.
- (1) Time is of the essence in this contract, and as delay in the prosecution of the Work will adversely impact the Owner's business, it is important that the Work be prosecuted to completion. Moreover, the cost to the Owner for the administration of the contract, including engineering, inspection, and supervision, will be increased as the construction period is lengthened.
  - (2) The Contractor may be declared delinquent because of unsatisfactory progress under this contract when the contract time allowed has not been entirely consumed, but the Contractor's progress at any check period does not meet at least one of the following two tests:
    - (a) The percentage of dollar value of completed Work with respect to the total amount of the contract is within 15 percentage points of the percentage of contract time elapsed.
    - (b) The percentage of dollar value of completed Work is within 15 percentage points of the dollar value which should have been performed according to the Contractor's own progress schedule previously approved by the Owner.
  - (3) The Contractor will be declared delinquent because of unsatisfactory progress under this contract should either of the following circumstances occur:
    - (a) The contract time allowed has been consumed and the Work has not been completed.
    - (b) The contract time allowed has not been entirely consumed, but the Contractor's progress at any check period does not meet either of the two tests described under Sub-article (2) above.
  - (4) A Contractor determined delinquent will be disqualified from further bidding by the Manager of Procurement and also will not be approved as a subcontractor so long as the delinquency status exists. Also, any individual, firm, partnership or corporation affiliated with a delinquent Contractor to the extent that it is

## **SECTION II.: THE WORK (...CONTINUED)**

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dependent upon the delinquent Contractor for either personnel, equipment, or finances shall likewise be disqualified. The Owner additionally reserves all rights and options pertaining to available legal remedies for such delinquency. A Contractor disqualified under the requirements of this Article will be removed from a delinquent status upon receipt of satisfactory evidence by the Owner's Project Manager and approval of Procurement that its progress is no longer delinquent, provided the contract time has not lapsed.

- (5) The principal progress verification will occur monthly and will generally coincide with receipt by the Owner's Project Manager of the Contractor's monthly Application for Payment and Work Progress Schedule.
- (6) Preliminary notices of delinquency will be sent to the Contractor by facsimile mail immediately thereafter, and confirmed by certified mail. The Contractor, once given such a preliminary notice of delinquency, will not be finally declared delinquent until a period of 10 calendar days after the preliminary notice has elapsed. During this 10-day period, the affected Contractor may request an extension of time or present other considerations that would affect its delinquency to which it feels it is entitled. Final notification of delinquency will be made by certified mail after the expiration of this 10-day period provided no extensions of time or other considerations are deemed proper by the Owner, and provided the delinquency status has not been corrected. Contractor shall provide an acceptable recovery schedule to Owner for approval.

Owner's failure to terminate for delinquency shall not serve as a waiver by the Owner.

- (7) The Owner may grant extensions of time during the prosecution of the Work, as allowed under the contract provisions regardless of the Contractor's delinquency status. The contract will be considered complete when all Work has been completed and accepted by the Owner, and final payment has been issued to the Contractor.

### **3. Substantial Completion**

The Substantial Completion, as defined in the "Definitions" of Section I.1. g, will be initiated in writing by the Contractor and/or the Owner for the purpose of making available the stated Work, or a specified part thereof, for its intended use. The Owner and the Contractor will conduct an inspection of the stated Work for compliance with the contract documents. The Owner will have prepared a written Punch List of all items and/or the deficiencies for the Work covered by the Certificate of Substantial Completion. The Punch List shall become a part of the



## **SECTION II.: THE WORK (...CONTINUED)**

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Certificate of Substantial Completion and must be completed prior to final acceptance of the Work. If the Owner agrees that the Work is ready for occupancy, a Certificate of Substantial Completion will be prepared by the Owner on the form included in the contract documents. The Statement shall be completed in its entirety and shall be signed by the Engineer, Contractor, Tenant and Owner, where applicable. Final payment and any retainage may be withheld until completion of the Punch List items by the Contractor, and accepted by the Owner. The Owner may supplement the Punch List at any time based on the disclosure of defective or incomplete work.

### **4. Tests and Inspections**

- a. Except as specifically stated in writing by the Owner, the Contractor shall establish and conduct its own quality testing program for materials and other Work performed thereon under this contract. Testing may include but not be limited to soils, aggregates, compaction, masonry, concrete, asphalt, painting, metals, pressure tests, welding, coatings, insulation, water quality, electrical circuitry, machinery, equipment or other applicable items. The Contractor shall, prior to the Preconstruction Conference, furnish electronically in E-Builder to the Owner a listing or schedule of testing it proposes to conduct for informational purposes. Results of such tests as performed by the Contractor shall be furnished electronically in E-Builder to the Owner within 48 hours of such testing, for information. No separate payment will be made by the Owner for any testing accomplished by the Contractor but the cost thereof will be considered as included in the overall contract price for the related items of Work.
- b. The Owner may employ, at its expense, an independent testing laboratory for the purpose of performing such tests as may be deemed necessary by the Owner.

If any Work or materials are found to be deficient as a result of such tests, the Contractor shall promptly correct same, or replace, in accordance with the specifications, and it may be required to revise and upgrade both construction and quality control procedures. If the Owner deems it necessary that additional testing shall be made of such correction or replacement, the Contractor shall pay the costs thereof.

- c. The Owner reserves the right to inspect any and all parts of the Work underway for conformance with the contract requirements. The making of tests by the Contractor, regardless of their indication, shall not relieve the Contractor of sole responsibility for Work that is defective or not in accordance with the requirements of the contract.
- d. Should the cost of remediation of deficient work be commercially wasteful, the Owner at its sole option may retain the nonconforming work for no cost to the Owner for that work.

## **SECTION II.: THE WORK (...CONTINUED)**

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### **5. Time**

- a. All time limits stated in the contract documents shall be consecutive calendar days unless otherwise stated.
- b. The contract completion time shall be as shown in the "Special Conditions". Timely completion is an essential element of this contract. Prevailing conditions of weather and environment at the worksite and the Owner's continuing port operations in the vicinity have been taken into account in establishing the contract time allowed for the Work.
- c. The Notice to Proceed will not be given until after receipt of evidence of insurance (in the manner specified) and contract bonds, and following the Preconstruction Conference. If the Preconstruction Conference is waived by the Owner, the Notice to Proceed will be issued immediately upon receipt of the required bonds and certificates by the Owner.

### **6. Warranties and Guarantees.**

- a. The Contractor shall correct any Work that fails to conform to the requirements of the contract documents where such failure to conform appears during the progress of the Work, and shall remedy any defects due to faulty materials, equipment or workmanship which appears within the warranty period. The Warranty Period is as specified in the "Special Conditions", unless the Technical Specifications require a longer warranty period for all or portions of the Work. The provisions of this condition apply to work done by subcontractors, as well as to work done by direct employees of the Contractor. The Contractor shall insure that its subcontractors/suppliers are bound by this requirement.
- b. The Contractor shall furnish all written warranties/guarantees for any materials or equipment electronically in E-Builder, which are required under this contract, or separately warranted by the manufacturers. Final payment shall be withheld from the Contractor until all warranty documents have been furnished to the Owner. All warranties shall be issued consistent with the requirements of these contract documents.

# GENERAL CONDITIONS

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## SECTION III.: CHANGES AND DISPUTES

### 1. Changed Conditions.

The Contractor shall promptly and before such conditions are disturbed, notify the Owner in writing of: a) subsurface or latent physical conditions at the site differing materially from those indicated in the contract documents, b) previously unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in this contract, or c) underground utilities or other obstructions not shown on the plans or reasonably expected to exist in the way of the Work at such location(s).

Notification shall be within 5 calendar days of discovery by the contractor. The Owner shall promptly investigate the conditions, and if it finds that such conditions do so materially differ and cause an increase or decrease in the Contractor's cost of, or the time required for performance of this contract, an equitable adjustment may be made, and the contract modified in writing accordingly by Change Order. Any claim by the Contractor for adjustment under this clause shall not be allowed unless timely notification has been made by the Contractor, or unless the Owner has granted a further period of time for determination of the extent of delay, magnitude of changed conditions, or determination of corrective action required.

### 2. Changes in the Work.

a. Change Orders - General. JAXPORT does not anticipate the issuance of Change Orders to the contract. The Contractor should not anticipate Change Orders; nor view any Change Orders that should occur as the opportunity for windfall profit. The Owner may authorize changes in the work consisting of additions, deletions or modifications to scope or schedule and the contract price or time (or both) being adjusted accordingly. All such changes in the Work shall be authorized by a written Change Order which shall document the change and specify any contract modifications such as price or schedule. No changes to the Work are authorized until the Contractor and the Owner have executed a formal Change Order. Verbal instructions do not constitute a Change Order.

(1) Either the Owner or the Contractor may initiate a Change Order request. In either event, the Contractor shall promptly prepare and submit electronically in E-Builder to the Owner a detailed justification for the Change Order request (when initiated by the Contractor) and a detailed quotation for the changed work, both time and money. The detailed quotation shall be complete and definitive as to the true costs of the changed work. The Owner will also require a complete breakdown of all costs that will be experienced by Contractor and all sub-tier contractors. Single line statements are not acceptable. The breakdown of costs may include, but are not limited to:

### **SECTION III.: CHANGES AND DISPUTES (...CONTINUED)**

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- Labor Hours (broken down by craft)
- Materials (broken down by units)
- Equipment (broken down by units)
- Transportation (specify)
- Supervision (specify)
- Taxes (specify)
- Permits (specify)
- Insurance and Bonding (specify)
- Mobilization (show detail of cost)
- Demobilization (show detail of cost)
- Any other information requested by the Owner
- Mark-up for Profit and Overhead (see Section III 2.a.2.)

The breakdown of time shall include a thorough justification for any extension of the contract completion date which may include a time impact analysis, if requested by the Owner. Only those items of Work that directly affect the "critical path" of the Project will be considered for time extension.

Additional equipment costs on change orders: For any machinery or special equipment (other than Small tools), including fuel and lubricant, the Contractor will receive 80% of the "Rental Rate Equipment Watch or an amount less than" for the actual time that such equipment is in operation on the work, and 50% of the "Rental Rate Equipment Watch or an amount less than" for the time the equipment is directed to standby and remain on the project site, to be calculated as indicated below. The equipment rates will be based on the latest edition (as of the date the work to be performed begins) of the "Rental Rate Equipment Watch for Construction Equipment" or the "Rental Rate Equipment Watch for Older Construction Equipment or an amount less than," whichever is applicable, as published by Equipment Watch, Penton Media, Inc. (version current at the time of bid), using all instructions and adjustments contained therein and as modified below. On all projects, the Engineer will adjust the rates using regional adjustments and Rate Adjustment Tables according to the instructions in the Equipment Watch.

Allowable Equipment Rates will be established as set out below:

(I) Allowable Hourly Equipment Rate = Monthly Rate/176 x Adjustment Factors x 80% or an amount less than.

(II) Allowable Hourly Operating Cost = Hourly Operating Cost x 80% or an amount less than.

(III) Allowable Rate per Hour = Allowable Hourly Equipment Rate x 80% + Allowable Hourly Operating Cost or an amount less than.

(IV) Standby Rate = Allowable Hourly Equipment Rate x 40% or an amount less than.

The Monthly Rate is The Basic Machine Rate plus Any Attachments or

### **SECTION III.: CHANGES AND DISPUTES (...CONTINUED)**

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an amount less than.

Standby rates will apply when equipment is not in operation and is directed by the Engineer to standby at the project site when needed again to complete work and the cost of moving the equipment will exceed the accumulated standby cost. Standby rates will not apply on any day the equipment operates for eight or more hours. Standby payment will be limited to only that number of hours which, when added to the operating time for that day equals eight hours. Standby payment will not be made on days that are not normally considered work days on the project.

Jaxport will allow for the cost of transporting the equipment to and from the location at which it will be used. If the equipment requires assembly or disassembly for transport, Jaxport will pay for the time to perform this work at the rate for standby equipment or an amount less than.

Equipment may include vehicles utilized only by Labor, as defined above.

- (2) The percentage mark-up for those items listed in Section III, Paragraph 2.a.1. shall be limited to 15 percent. All subcontract costs will be limited to 5 percent mark-up per tier, with a maximum of 10% regardless of the number of tiers.
- (3) All submissions of costs shall be in a form that is acceptable for verification by the Owner. Vendor quotations or Purchase Orders shall support material costs. Labor and supervision costs shall be supported by typical certified payroll documents. Equipment costs must be within the norm of published equipment rental rates for the Jacksonville area.
- (4) The pricing of Change Orders shall be determined in one of three ways:
  - (a) For changes in Work for which unit prices were already established in the contract, the established unit prices shall also apply to work performed under the Change Order. Established contract unit prices are all inclusive of costs, overhead and profit and shall not incur any additional mark-up.

Force Account: Upon written directive of the Owner, the Contractor shall perform the work utilizing the "time and materials" method of pricing, under which all costs are auditable and payment to the Contractor will be limited to those actual expenses, plus the mark-ups allowed in Section III. 2.a. (2). The Change Order will be limited to an estimated cost not-to-exceed amount for fiscal control. Should this amount be reached due to unforeseen conditions, an additional Change Order will be sought.

## **SECTION III.: CHANGES AND DISPUTES (...CONTINUED)**

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- (b) By agreement of both parties of a lump sum amount for the change to the contract. Determination of the lump sum amount will require submission of a breakdown of costs as detailed in Section III.2.a.(1) and mark-ups applied from Section III. 2.a.(2), and any other information reasonably requested by Owner.
- b. Change Order Form. All Change Orders shall be executed on the form approved by JAXPORT. Execution of a Change Order resolves all issues of time and compensation. No other method of reservation of rights shall be recognized.
- c. The Contractor shall keep and present in such form as the Owner may direct, a correct and current account of all direct costs of the Work performed. All documentation shall be maintained according to generally accepted accounting practices (GAAP), in such form and detail as to be audited for accuracy and content. JAXPORT'S Project Manager shall periodically check and certify the costs. Payments shall be made to the Contractor based upon the certified costs of the Contractor, with mark-ups, as set forth in Section III.2.a.(2).
- d. Bond Liability. Any changes made in the specifications for the work by Change Order (whether such changes increase or decrease the amount thereof) or any change in the manner or time of payments made to the Contractor, or any change in the contract completion date occasioned by changed Work shall not, in any way, annul, release or affect the liability on the bond provided by the Contractor. The Contractor is solely responsible for notification of Surety of any Surety changes.

Notwithstanding the foregoing, it is understood and agreed that the Owner may, at any time, issue written instructions to the Contractor requiring changes within the scope of the work or schedule that are consistent with the general intent of the contract documents, at no extra cost to the Owner.

### **3. Claims.**

- a. Claims for Extra Work. If the Contractor considers that any written instructions, acts, or omissions of the Owner or any of the Owner's agents, employees, consultants, contractors, subcontractors or suppliers have caused or will cause the Contractor to incur extra costs or time not included in the contract documents, the Contractor shall give written notice to Owner of such claim within 5 calendar days after the initial date of such acts, omissions, instructions or occurrence, and shall not proceed with the Work until receipt of the Owner's written directive to do so. Upon receipt of such a directive, the Contractor shall proceed in accordance therewith even though agreement may not have been reached as to whether said instructions require work that is within or outside of the scope of the contract documents or, if outside, the amount of the equitable price or time adjustment to which the Contractor is entitled for the performance thereof.

### **SECTION III.: CHANGES AND DISPUTES (...CONTINUED)**

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No claim for such extra costs or time shall be allowable in the absence of the written directive of the Owner and the timely written notice by the Contractor. In the absence of either or both, the Contractor's claim for extra costs or time on account thereof shall be deemed to have been waived.

- b. Claims for Damages. Should the Contractor suffer injury or damage to any other party because of any act or omission of the other party or of any of its employees, agents, or others for whose acts it is legally liable, claim shall be made in writing to the Owner within 5 calendar days after the first observance of such injury or damage.
  - (1) Should the "no damages for delay" clause not be enforced by the court, the Contractor waives any claim for extended home office overhead that may result from any delay on the project.
  - (2) The Contractor specifically waives any right to seek attorney's fees and construction claim preparation costs from the Owner.
  - (3) The Contractor shall not present nor recover on any claim from the Owner based on any formula(s), hypothetical or statistical methodologies used in damage computation. The Contractor may only recover if it can provide documented pay records specifically indicating any alleged damage, loss, or cost.

#### **4. Completion of Work by Owner**

Upon declaration of default, the Owner shall have full power and authority to appropriate and/or use any or all materials and equipment on the site which are suitable and acceptable, and may enter into an agreement with others for the completion of the Work under the contract, or may use other methods which in the opinion of the Project Manager are required for the completion of the Work in an acceptable manner. All costs and charges incurred by the Owner because of the Contractor's default, including the costs of completing the Work under the contract, shall be charged against the Contractor and its Surety. In case the expense so incurred by the Owner is less than the sum which would have been payable under the contract if it had been completed by the defaulting Contractor, the defaulting Contractor shall be entitled to receive the difference.

Owner reserves their right to supplement, with additional workers and equipment, the Contractor's forces if Contractor is not reasonably projected to complete the project in a safe and timely manner. Owner shall give the Contractor 10 day's written notice of its intent to utilize supplemental forces. The Contractor shall have the primary responsibility to coordinate all work on the project and shall fully cooperate with all other forces.

In case the expense incurred by the Owner pursuant to this Section exceeds the sum which would otherwise have been payable under the contract, then the Contractor and its Surety shall be liable and shall pay the Owner the amount of the excess.

### **SECTION III.: CHANGES AND DISPUTES (...CONTINUED)**

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If, after the 10-day default notification period, and prior to any action by the Owner to otherwise complete the Work under the contract, the Contractor should convincingly establish its intent and ability to prosecute the Work in accordance with the Owner's requirements, the Owner may elect to permit the Contractor to resume the Work in which case any costs to the Owner incurred by the delay or from any reason attributable to the delay will be reimbursed by the Contractor or Surety.

#### **5. Default and Termination**

- a. If the Contractor fails to begin the Work under the contract promptly upon receipt of the Notice to Proceed, or fails to perform the Work with experienced and effective supervision, sufficient workers, sufficient equipment, or sufficient materials to assure the prompt completion of the contract (i.e., the Contractor is declared delinquent), or performs the Work unsuitably, or neglects or refuses to remove materials or to perform anew such Work as may be rejected as unacceptable and unsuitable, or discontinues the prosecution of the Work, or fails to resume Work which has been discontinued, or becomes insolvent or is declared bankrupt, or files for reorganization under the bankruptcy code, or commits any act of bankruptcy or insolvency, either voluntarily or involuntarily, or allows any final judgment to stand against them unsatisfied for a period of 10 calendar days, or makes an assignment for the benefit of creditors, or fails to comply with contract requirements regarding minimum wage payments, E.E.O. or DBE requirements, or for any other cause whatsoever fails to carry on the Work in an acceptable manner, or if the Surety executing the bond for any reasonable cause becomes unsatisfactory in the opinion of the Owner, the Owner will give notice in writing to the Contractor and its Surety of such delay, neglect, delinquency or default.
- b. If the Contractor, within a period of 10 calendar days after written notice of default from the Owner delivered to the Contractor's representative on the jobsite, or by facsimile transmission and confirmed by certified mail, does not proceed to correct the conditions of which complaint is made, the Owner shall, upon written notification from its Project Manager of such delay, neglect, or default and the Contractor's failure to correct such conditions, have full power and authority without breaching the contract to take the prosecution of the Work out of the hands of the Contractor and to declare the contract in default and make demands upon the Surety consistent with the rights set forth in the Performance Bond attached herein.
- c. The Owner may, after written notice to the Contractor, terminate the contract or a portion thereof for just cause such as default or for other reasons which are determined to be in the interest of the Owner. Such reasons for termination may include but are not necessarily limited to national defense or national emergency which creates a serious shortage of materials, orders from duly constituted authorities relating to energy conservation, and restraining order or injunctions obtained by third-party



### **SECTION III.: CHANGES AND DISPUTES (...CONTINUED)**

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citizen action resulting from national or local environmental protection laws or where the issuance of such order or injunction is primarily caused by acts or omissions of persons or agencies other than the Contractor and unacceptable interference with Operations.

- d. When a contract or any portion thereof is terminated before completion of all items of Work in the contract, payment will be made for the actual number of units or items of Work completed at the contract unit price, or as mutually agreed for items of Work partially completed or not started. No claim for loss of anticipated profits shall be allowed and are specifically waived by Contractor.
- e. Reimbursement for mobilization expenses (when not otherwise included in the contract) including moving equipment to the job will be considered where the volume of Work completed is too small to compensate the Contractor for these expenses under the contract unit prices; the intent being that an equitable settlement will be made with the Contractor.
- f. Acceptable materials procured by the Contractor for the Work that have been inspected, tested, and approved by the Owner, and that are not incorporated in the Work may be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Project Manager.
- g. Termination of a contract or a portion thereof under the provisions of this sub-article shall not relieve the Contractor of its responsibilities for the completed portion, nor shall it relieve its Surety of its obligation for and concerning any claims arising out of the Work performed.
- h. JAXPORT shall have the absolute right to terminate in whole or part the Contract, with or without cause, at any time after Award upon written notification of such termination.

In the event of termination for convenience, JAXPORT will pay the Company for all disbursements and expenses that the Company has incurred, or those for which it becomes obligated prior to receiving JAXPORT's notice of termination. JAXPORT will also pay the Company costs incurred less the reasonable resale value, of materials or equipment that the Company has already ordered, obtained or fabricated in connection with the Contract.

Upon receipt of such notice of termination, the Company shall stop the performance of the Work hereunder except as may be necessary to carry out such termination and take any other action toward termination of the Work that JAXPORT may reasonably request, including all reasonable efforts to provide for a prompt and efficient transition as directed by JAXPORT.

JAXPORT will have no liability to the Company for any cause whatsoever arising out of, or in connection with, termination including, but not limited to, lost profits, lost opportunities, resulting change in business condition, except as expressly stated within these Contract Documents.

## **SECTION III.: CHANGES AND DISPUTES (...CONTINUED)**

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### **6. Delays and Extensions of Time**

In the event that the Contractor, in the performance of the Work, encounters inefficiencies, disruptions, or delays as a result of the partial suspension or resequencing of work thereof, or incidental interference therewith by the Owner or its other contractors, or as a result of other unforeseeable causes beyond the control and without fault or negligence of the Contractor such as, but not limited to, Acts of God, fire, flood, war, governmental priority controls, railcar shortages, general strikes, and labor work stoppages, the Contractor shall notify the Owner in writing within 5 calendar days of the commencement of the delay that he intends to request additional time for contract completion. Such requests for additional time shall be decided by the Owner within 5 working days of receipt of notification and if a time extension is approved, it shall be authorized by Change Order. In the event of a continuing delay having a single cause, notification as above is required, however, a determination by the Owner as to time extension allowed will not be made until the Contractor has submitted electronically in E-Builder complete facts as to the reason and total extent of the delay, including such documentation as may be reasonably required by the Owner. No time extension shall be granted for delays occurring more than 5 calendar days before written notification is made to the Owner, and no time extension shall be granted for any delay caused or occasioned by fault, negligence, omission, or failure to timely prosecute the Work, including procurement delays on the part of the Contractor, its agents, suppliers, employees, or subcontractors. The Contractor shall also take immediate action upon incurring such delay to minimize the effects of that delay. The allowability and length of any such time extension shall be determined in writing. In making that determination, no extension of time will be allowed the Contractor for delays encountered in one or more phases of the Work that can be overcome by reasonable readjustments of the Contractor's planned progress on other phases of the Work. Only critical path delays will be recognized for an extension of time. All requests for an equitable time extension shall be accompanied with a time impact analysis.

- a. Time extensions may also be allowed on the same terms and conditions as set forth above, in the event that the Contractor over the course of the Work encounters unusually adverse weather in excess of the norm for the locality. The Contractor expressly agrees that in undertaking to complete the Work within the time specified, it has made allowance for all hindrances including adverse weather and delays which might normally be expected to occur in performing the Work. No claims shall be made for money by the Contractor for such hindrances and delays.
- b. The Contractor's sole and exclusive remedy for delays and inefficiencies as described herein shall be an equitable extension of time. The Contractor shall not be entitled to any additional compensation or payment for extra costs or damages incurred by them due to hindrances of, or delays to, the progress of the Work. Any claim related to delay shall be in writing and include a time impact analysis.
- c. No extensions of time will be granted due to Contractor's failure to protect

## **SECTION III.: CHANGES AND DISPUTES (...CONTINUED)**

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the site, materials, or working conditions from adverse weather conditions including, but not limited to site drainage, storage, and temporary enclosures as needed.

- d. No extensions of time will be granted due to Contractor's failure to diligently prosecute the contract, including, but not limited to, procurement delays.
- e. Under no circumstances shall any claim for additional costs be accepted based upon a hypothetical formula, Means or other estimated costs. All claims shall be presented utilizing discrete data evidencing direct costs to project.
- f. Contractor waives any claims for attorney fees and claims consultant costs.

### **7. Disputes**

Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement with the Project Manager shall be decided by appeal to the Chief Executive Officer of JAXPORT. The Chief Executive Officer shall, within 30 days of receipt of the written appeal, reduce its decision to writing, and mail or otherwise deliver a copy to the Contractor. The 30-day period may be extended in 30-day increments by written order of the Executive Director, or its designee, when and if it determines that additional studies or investigations are necessary to render a decision. This decision shall be final and conclusive, unless within 30 days after receipt thereof by the Contractor, the Contractor mails or otherwise delivers to the Chief Executive Officer a written appeal addressed to the Chairman of JAXPORT. In connection with the appeal proceeding under this clause, the Contractor shall be given an opportunity to be heard and to offer supportive evidence to its appeal. Pending final decision on the dispute should the project be ongoing, the Contractor shall proceed diligently with the performance of the contract in accordance with the Chief Executive Officer's decision. The decision on the appeal shall be rendered by JAXPORT's Governing Body and shall be final and conclusive unless determined by subsequent judicial review to have been fraudulent, capricious, so grossly erroneous as to imply bad faith, or not supported by any substantial evidence.

Compliance with this process shall be a condition precedent before any litigation can be brought to appeal any decision.

### **8. Recovery Rights, Subsequent to Final Payment**

The Owner reserves the right should an error be discovered in the partial or final Applications for Payment, or should proof of defective Work or materials used by or on the part of the Contractor be discovered after the final payment has been made to claim and recover from the Contractor or its Surety, or both, by process of law, such sums as may be sufficient to correct the error or make good the defects, errors, or omissions in the Work and materials.

### **SECTION III.: CHANGES AND DISPUTES (...CONTINUED)**

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All records pertaining to the Project shall be retained by the Contractor for a period of three years from the date of final acceptance of the Project, unless additional time for retention is requested in writing by the Owner. Upon request, all such records shall be made available to the Owner or its representative. For the purpose of this Section, records shall include all books of account, supporting documents, both paper and electronic, and papers deemed necessary by the Owner to assure compliance with the contract provisions, photographs, videos, video tapes and project pictures stored electronically. Contractor shall reasonably cooperate with the Owner in obtaining and reviewing all documentation herein.

# GENERAL CONDITIONS

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## SECTION IV.: ADMINISTRATIVE

### 1. "As-built" Drawings and Equipment Manuals

- a. At the completion of the Work under this contract, the Contractor shall prepare and deliver electronically in E-Builder to the Owner one complete set of the construction drawings indicating As-Built conditions. Final As-built drawings submissions shall consist of:

- (1) Adobe Acrobat format (.pdf) – 1 complete set
- (2) AutoCAD Map 3D 2014 format (.dwg) to include external references

Final payment shall be withheld from the Contractor until acceptable "As-built" drawings are furnished to the Owner.

- b. The Contractor shall furnish electronically in E-Builder a complete set of operations and maintenance instructions together with the repair parts lists for all mechanical and electrical equipment. Those instructions shall be prepared and published by the manufacturer, and shall be delivered to the Owner prior to the final inspection. Final payment shall be withheld from the Contractor until such documents are furnished to the Owner.

### 2. Conferences

- a. Unless waived by agreement of both parties, a Preconstruction Conference will be held at a mutually convenient time as soon as is practicable following award of this contract; normally, within 21 calendar days thereafter. The Preconstruction Conference shall be attended by responsible representatives of the Owner, and the Contractor and its subcontractors. The Contractor, its subcontractors and its suppliers are expected to be fully familiar with the contract documents and specific Project requirements by the time set for the Preconstruction Conference and the Owner may reasonably presume such notwithstanding paragraph "c" of the "Contract Documents" Section I of these General Conditions. The Contractor shall then present for discussion at the meeting any questions, concerns, discrepancies, need for clarifications and any other significant issues which may in any manner affect the project schedule or its performance of the Work for these issues discussed after the award of contract. Written clarifications and/or interpretations of the contract documents shall be furnished to the Contractor without unreasonable delay. Written "Minutes" of the Preconstruction Conference will be prepared by the Owner, with copies provided to all attendees and which the "Minutes" shall be retained.

The Contractor shall deliver to the Owner at the Preconstruction Conference the specified copies of:

- Schedule of Values (where applicable).
- Quality control program.

## **SECTION IV.: ADMINISTRATIVE (... Continued)**

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- List of project subcontractors.
  - List of Contractor's project management team with telephone numbers.
  - Identification of major suppliers and/or manufacturers to be used on the project.
  - Schedule for, and listing of, shop drawing submittals.
  - Other documents as may be required elsewhere in these specifications.
- b. The Contractor or Owner may request conferences for other useful purposes at convenient times throughout the contract period. Representatives of all concerned parties shall receive reasonable notice of any such meeting.

### **3. Payments**

Unless otherwise specified in the section of "Special Conditions" and upon receipt electronically in E-Builder of the Contractor's Application for Payment (Forms AFP-1 and AFP-2), payment for this Work will be made as follows:

- a. Payment will be made once each month in the amount of 90 percent of the value of completed Work, based on contract prices of labor and materials incorporated in the Work and of materials suitably stored at the site thereof for incorporation in the Work, as estimated or approved by the Owner's representative less the aggregate of previous payments. When said value reaches 50 percent of the total contract amount, the Project Manager will reduce the percentage rate of retainage to 5 percent for work performed thereafter. At such time as the Work is substantially complete and is available for beneficial use/occupancy, the Project Manager may, at its discretion, release the retainage, except that a sufficient amount may be withheld to cover the cost of any claims by the Owner, incomplete items, until final settlement of the contract. Final payment, including retainage will be made after closeout of the Work has been satisfactorily completed and all requirements of the contract documents have been fulfilled.
- b. The Contractor shall submit electronically in E-Builder to the Project Manager a proposed Schedule of Values of the various portions of the Work, including line item quantities aggregating to the total contract sum, through E-Builder and prior to the Preconstruction Conference. This schedule, when approved by the Project Manager, shall be used as a basis for the Contractor's application for payments. The Contractor shall update this schedule each time a Change Order affecting the contract total price is approved. The contract price will be adjusted to provide payment for the actual quantities of unit price items as they are completed and accepted. The following items are required with each AFP:
- (1) Form AFP-1 Application for Payment
  - (2) Form AFP-2 Schedule of Values
  - (3) Progress Schedule

## **SECTION IV.: ADMINISTRATIVE (... Continued)**

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(4) DBE Form 5

(5) Narrative Report that addresses:

Work Performed

Work Planned

Problems

Open Issues

(6) Photographs (See Section SC, Item 11 for detailed requirements.)

c. Payments may be withheld for failure of the Contractor to comply with the provisions of the contract documents, including but not limited to:

- (1) Defective work not remedied.
- (2) Failure of the Contractor to make payments properly to subcontractors or for labor, materials, or equipment.
- (3) Any delay or damage to another Contractor, upon certification by injured Contractor, of the cause and amount of any said damage.
- (4) Unsatisfactory prosecution of the Work by the Contractor.

Payments may also be withheld if claims have been filed or there is reasonable evidence indicating the probable filing thereof, or if Contractor's Surety for this Project so requests in writing.

Withholding of payments is a remedy in addition to all other remedies available to the Owner. Where pursuant to condition (2) of this paragraph, a contractor certifies to the Owner the necessity to withhold progress payments to another contractor, the certifying contractor shall defend, indemnify, and hold harmless the Owner from any and all claims or suits arising from such action, which is discretionary with the Owner.

- d. Whenever Mobilization and Demobilization are a part of the bid items, Mobilization will account for and be paid out at sixty percent (60%) and Demobilization will account for and be paid out at forty percent (40%).
- e. Whenever any change or combination of changes in the Work results in an increase or decrease in the original estimated contract quantities, and the Work added or eliminated is of the same general character as that shown on the original plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantities of work done, and no allowance will be made for any loss of anticipated profits because of increases or decreases in quantities provided, however, that any increased or decreased work covered by a Change Order shall be paid for as stipulated therein.
- f. Final payment shall not be made until the Contractor has delivered to the Owner any required submittals, the Certificate of Substantial Completion (Form SUBCOM); Contractors Affidavit to Owner (Form FCC); Consent of Surety to Final Payment (Form CONSUR), including valid Power of Attorney, and DBE Form 5.

## **SECTION IV.: ADMINISTRATIVE (... Continued)**

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- g. No payment by the Owner shall be construed to be acceptance of defective Work or improper materials. Contractor warrants and guarantees that title to all work, materials, and equipment covered by any Application for Payment, whether incorporated into the Project or not will pass to the Owner at time of final payment, free and clear of all liens, claims, security interests and encumbrances.
- h. Payments will be made within 20 business days after receipt of Contractor's properly documented invoice(s), unless returned for correction of invoice(s), or submission of additional substantiation.
- i. The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those specifically preserved according to the provisions of these contract documents.
- j. The Owner may at any time have access to the Contractor's records for the purpose of auditing the financial and contractual performance of the Contractor. The Owner may obtain copies of all financial and scheduling computer disks at any time from the Contractor, and shall have reasonable access to all other documents throughout the duration of the project and for three (3) years following substantial completion except those that would be privileged under Florida law. The Owner may audit the financial records of the Contractor at any reasonable time, at its own expense.

### **4. Progress Schedule**

The Contractor shall prepare for the Owner's approval a progress schedule for the Project showing the dates for the starting and completion of the various items of construction. The schedule shall be prepared in Microsoft Project (or equivalent) format, unless the Technical Specifications provide for a more detailed progress schedule.

Four (4) copies shall be furnished to the Owner's representative at the Preconstruction Conference. This schedule, after approval, shall be used by the Owner as the primary means of determining satisfactory execution of the Work by the Contractor. No payments will be made to the Contractor until the schedule is approved. All proposed Change Orders will include a revised schedule.

Should the Contractor fall behind the approved schedule, it shall provide a recovery schedule and be required to revise methods or operations, increase its forces (labor and equipment), work extra hours per day, and/or work extra days per week as necessary until the scheduled progress is acceptable, at no extra compensation by the Owner. Failure on the part of the Contractor to take necessary and sufficient actions in this regard and to put the Project back on schedule within a reasonable time, not to exceed 30 calendar days after notification by the Owner of such delinquency, shall be considered sufficient grounds for termination of the contract. The decision by the Owner not to terminate shall not constitute a waiver or preclude the termination for default as appropriate.



#### **SECTION IV.: ADMINISTRATIVE (... Continued)**

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Any delays encountered during the construction which may be excusable under the provisions of these "General Conditions" shall be brought to the Project Manager's attention in accordance with the provisions. The approved Project schedule may, depending on the Project Manager's decision, be adjusted accordingly.

# GENERAL CONDITIONS

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## SECTION V.: INSURANCE AND BOND

### 1. Insurance and Indemnification.

- a. The Contractor shall not commence Work until the Contractor has procured the insurance required under this Section and such insurance has been approved by the Owner. The Contractor shall provide evidence of such insurance in the following manner:
  - (1) Contractor agrees, at its sole expense, to maintain on a primary, non-contributory basis during the life of this Contract or performance of Work hereunder, insurance coverages, limits, and endorsements unless otherwise noted herein. Contractor agrees to provide evidence of Commercial General Liability, Contractor's Professional Errors and Omissions Liability and Commercial Umbrella/Excess Liability coverages at execution of the Contract. The other coverages required herein for Business Auto Liability, Contractor's Pollution Legal Liability, Inland Marine Builder's Risk Insurance, and Workers' Compensation. In the event the Contractor performs any site work, other than testing, then all insurance required herein will need to be evidenced prior to commencement of said site work.
  - (2) The Contractor agrees the insurance requirements herein as well as JAXPORT's review or acknowledgement, is not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Contractor under this Contract.
  - (3) As evidence of compliance with the insurance required by Paragraph "c.", Subparagraphs 1 (Workers' Compensation/Employers' Liability), 2 (Commercial General Liability) and 3 (Business Auto) below, the Contractor shall furnish the Owner with a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of the insurer(s) providing the coverage. The specified form must be used; no substitutions will be permitted.
  - (4) As evidence of compliance with the insurance required by Paragraph "c.", Subparagraph 4 (Protection for Owner) below, the Contractor shall furnish the Owner with either the original of the Owner's and Contractor's Protection Liability Policy(ies) or a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of the insurer(s) verifying inclusion of the Additional Insured endorsement in the Commercial General Liability Coverage.
  - (5) If this contract includes construction of, or additions to aboveground buildings or structures, or the installation of machinery or equipment into an existing structure as evidence of compliance with the insurance required by Paragraph "c.", Subparagraph 5 (property insurance) below, the Contractor shall furnish the Owner with the original of the policy or policies of insurance required and a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of

## **SECTION V.: INSURANCE AND BOND (... Continued)**

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the insurer(s).

- (6) With respect only to the insurance required by Paragraph "c.", Subparagraph 4 (Protection for Owner) and Subparagraph 5 (property insurance) below, and then only for a maximum of sixty (60) days from the date of inception of the policy or policies in lieu of the original of any required policy or policies of insurance, the Contractor may furnish an original binder or binders of the insurance signed by an authorized representative of the insurer(s) and a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of the insurer(s).
  - (7) Until such time as the insurance is no longer required to be maintained by the Contractor, the Contractor shall provide the Owner with renewal or replacement evidence of the insurance in the manner described by Paragraph "a.", Subparagraphs 1, 2, 3 and 4 below, no less than thirty (30) days before the expiration or replacement of the insurance for which previous evidence of insurance has been provided.
  - (8) Neither approval by the Owner for failure to disapprove the insurance furnished by the Contractor shall relieve the Contractor of the Contractor's full responsibility to provide the insurance as required by this contract.
- b. Insurers providing the insurance required by this contract must meet the following minimum requirements:
- (1) Such insurers must be licensed to write insurance of the required class(es) in the State of Florida, either: a) authorized by subsisting certificates of authority issued to the companies by the Department of Insurance of the State of Florida, or b) with respect only to the coverage required by Paragraph "c.", Subparagraph 1 (Workers' Compensation/Employers Liability) authorized as a group self-insurer pursuant to Florida Statutes 440.57.
  - (2) In addition, such insurers other than those authorized by Florida Statutes 440.57 shall have and maintain throughout the period for which coverage is required a Best's Rating of "A-" or better and a Financial Size Category of "VII" or better according to A. M. Best Company.
  - (3) If, during the period when an insurer is providing the insurance required by this contract, an insurer shall fail to comply with the foregoing minimum requirements, as soon as the Contractor has knowledge of any such failure, the Contractor shall immediately notify the Owner and immediately replace the insurance provided by the insurer, with an insurer meeting the requirements. Until the Contractor has replaced the unacceptable insurer with an insurer acceptable to the Owner, the Contractor shall be in default of this contract.

## **SECTION V.: INSURANCE AND BOND (... Continued)**

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- c. Without limiting any of the other obligations or liabilities of the Contractor, the Contractor shall, at the Contractor's sole expense, procure, maintain and keep in force the amounts and types of insurance conforming to the minimum requirements set forth in this Paragraph "c." Except as otherwise specified in this contract, the insurance shall commence prior to the commencement of work by the Contractor and shall be maintained in force until the contract completion date.

(1) Workers' Compensation/Employers' Liability:

- (a) The Contractor's insurance shall cover the Contractor and its subcontractors of every tier for those sources of liability which would be covered by the latest edition of the standard Workers' Compensation Policy, as filed for use in Florida by the National Council on Compensation Insurance, without restrictive endorsements. In addition to coverage for the Florida Workers' Compensation Act, where appropriate, coverage is to be included for the Longshoremen's and Harbor Workers' Compensation Act, Maritime, including Jones Act, Federal Employers' Liability Act and any other applicable Federal or State laws.

NOTE: If the project is to be accomplished on the face of the wharf, the concrete area where crane rails are located to the edge of the wharf and underneath the wharf (piling, deck repairs, etc.), Longshoremen's and Harbor Workers' Compensation will be required.

- (b) Subject to the restrictions of coverage found in the standard Workers' Compensation Policy, there shall be no maximum limit on the amount of coverage for liability imposed by the Florida Workers' Compensation Act, the Longshoremen's and Harbor Workers' Compensation Act, or any other coverage customarily insured under Part One of the standard Workers' Compensation Policy. The minimum amount of coverage for those coverage's customarily insured under Part Two of the standard Workers' Compensation (inclusive of any amounts provided by an umbrella or excess policy) shall be those amounts stated in Required Limits of Insurance (Form 100-87).

(2) Commercial General Liability:

The Owner shall be named an additional insured on the CGL Policy as well as Umbrella and or Excess policy or policies. The Owner shall not be responsible to pay any deductible sum. This is not meant to extend the Owner's liability beyond Section 768.28, Florida Statutes.

- (a) The Contractor's insurance shall cover the Contractor for those sources of liability which would be covered by the latest occurrence form edition of the standard Commercial General Liability Coverage Form (ISO Form CG 2010 07 04 or GC 2010

## **SECTION V.: INSURANCE AND BOND (... Continued)**

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04 13 Additional Insured – Owners, Lessees, or Contractors-Schedule Persons or Organization, in combination with the GC 2037 10 01) or similar endorsements providing equal or broader Additional Insured Coverage. Commercial General Liability must be filed for use in the State of Florida by the Insurance Services Office, without the attachment of restrictive endorsements other than the elimination of Coverage C., Medical Payments and the elimination of coverage for Fire Damage Legal Liability.

- (b) If the contract value of this Project exceeds \$100,000, the Contractor shall maintain separate limits of coverage applicable only to the work performed under this contract. The minimum limits to be maintained by the Contractor (inclusive of any amounts provided by an umbrella or excess policy) shall be those that would be provided with the attachment of the Amendment of Limits of Insurance (designated Project or Premises) endorsement (ISO Form CG 25 01) to a Commercial General Liability Policy with the minimum amounts stated in the Required Limits of Insurance (Form 100-87).
  - (c) The Contractor shall continue to maintain Products/Completed Operations Coverage for a period of three (3) years after the contract completion date. The insurance shall cover those sources of liability which would be covered by the latest occurrence form edition of Coverage A of the Commercial General Liability Form (ISO Form CG 00 01) or Coverage A of the occurrence form Products/Completed Operations Liability Coverage Form (ISO Form CG 00 37), as filed for use in the State of Florida by the Insurance Services Office, without restrictive endorsements. The minimum limits to be maintained by the Contractor (inclusive of any amounts provided by an umbrella or excess policy) shall be the amounts stated in the Required Limits of Insurance (Form 100-87).
  - (d) Contractor agrees it's coverage will not contain any restrictive endorsement(s) excluding or limiting Products/Completed Operations, Independent Contractors, Broad Form Property Damage, X-C-U Coverage, Contractual Liability, Cross Liability or Separation of Insured's. The Contractor agrees that any self-Insured Retention or deductible shall not exceed \$25,000.
- (3) Business Auto Policy:
- (a) The Contractor's insurance shall cover the Contractor for those sources of liability which would be covered by Part IV of the latest occurrence edition of the standard Business Auto Policy (ISO Form CA 00 01), including coverage for liability contractually assumed, as filed for use in the State of Florida by the Insurance Services Office, without the attachment of

## **SECTION V.: INSURANCE AND BOND (... Continued)**

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restrictive endorsements. Coverage shall include owned, non-owned and hired autos.

- (b) The minimum limits to be maintained by the Contractor (inclusive of any amounts provided by an umbrella or excess policy) shall be the amounts stated in the Required Limits of Insurance (Form 100-87).
- (4) Protection for Owner Coverage:
  - (a) The Contractor shall provide the Owner with an Owner's and Contractor's Protective Liability Policy (OCP Policy). If the Contractor is unable to procure the minimum amounts of insurance in a single policy, the Contractor may provide the minimum limits through a combination of a primary OCP policy and one or more excess policies. The policy or policies shall cover the Owner for all sources of liability which would be covered by the latest occurrence edition of the standard Owner's and Contractor's Protective Liability Coverage Form, Coverage for Operations of Designated Contractor (ISO Form CG 00 09), as filed for use in the State of Florida by the Insurance Services Office, without the attachment of restrictive endorsements.
  - (b) The Owner shall also be a named an unconditional insured on the OCP Policy and, if applicable, the excess policy or policies. This coverage extends to any act or omission by the Owner, its employees, directors, and agents related to this project. The policy or policies shall be endorsed to include the Owner's officials, officers, agents and employees as insured's. The policy or policies shall include the Contractor and the Contractor's subcontractors of every tier as the contractor designated in the declarations. The coverage is not meant to waive any limits set by Section 768.28, Florida Statutes.
  - (c) The minimum OCP Policy limits per occurrence and if subject to an aggregate, annual aggregate to be provided by the Contractor (inclusive of any amounts provided by excess policies) shall be the same as the amounts shown in the Required Limits of Insurance (Form 100-87) as the minimum per occurrence and general policy aggregate limits respectively required for the Commercial General Liability Coverage. The limits afforded by the OCP Policy and any excess policies shall apply only to the Owner and the Owner's officials, officers, agents and employees and only to claims arising out of, or in connection with, the Work under this contract.
  - (d) The OCP Policy and, if applicable, the excess policy or policies, must be specifically endorsed to provide the Owner with 45 days' written notice of cancellation, non-renewal or restriction.

## **SECTION V.: INSURANCE AND BOND (... Continued)**

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- (e) As an alternative to the OCP policy, the Contractor may include the Owner and the Owner's officials, officers, agents, consultants and employees as Additional Insured's on the Commercial General Liability Coverage required pursuant to Subparagraph "c.2". If the Additional Insured alternative is selected, the coverage afforded such Additional Insured's shall be no more restrictive than that which would be afforded by adding the Owner and the Owner's officials, officers, agents, consultants and employees as Additional Insured's using the latest Additional Insured - Owners, Lessees or Contractors (Form B) endorsement (ISO Form CG 2010). Certificate of Insurance Compliance shall be clearly marked to reflect use of this alternative.
- (5) Property Insurance:
  - (a) If the contract includes construction of, or additions to aboveground buildings or structures, Contractor shall provide all risk Builder's Risk Insurance on a form which is no more restrictive than that afforded by the latest editions of Insurance Services Office Forms CP 00 20 and CP 10 30. If the contract does not include construction of, or additions to aboveground buildings or structures but does involve the installation of machinery or equipment, Contractor shall provide an all risk installation Floater including installation and transit.
  - (b) For Builder's Risk, the amount of insurance is to be 100 percent of the completed value of such addition(s), building(s) or structure(s). For Installation Floater, the amount of insurance is to be 100 percent of the installed replacement cost value. For Builder's Risk, the recovery shall be based on completed replacement cost. For Installation Floater, the recovery shall be based on the installed replacement cost.
  - (c) The Builder's Risk Policy must be specifically endorsed to eliminate any "occupancy clause" or similar warranty or representation that the building(s), addition(s) or structure(s) in the course of construction shall not be occupied without specific endorsement of the policy. The policy must be endorsed to provide that, subject to the notice of cancellation requirement, the Builder's Risk coverage will continue to apply until final acceptance of the building(s), addition(s) or structure(s) by the Owner. The Installation Floater Policy must be specifically endorsed to provide that, subject to the notice of cancellation requirement, the policy shall remain in force until final acceptance of the machinery or equipment by the Owner.
  - (d) The maximum deductible shall be \$5,000.00 per occurrence.
  - (e) The Owner must be included as a named insured for any liability arisen from its acts relating to the project.

## **SECTION V.: INSURANCE AND BOND (... Continued)**

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- (f) The policy must be specifically endorsed to provide the Owner with 45 days' written notice of cancellation, non-renewal or restriction.
  - (g) If the contract includes construction of, or additions to, aboveground buildings or structures which are located in a special flood hazard area as defined by the National Flood Insurance Program, flood insurance must be afforded for the lesser of the total insurable value of such buildings or structures, the maximum amount of flood insurance coverage available under the National Flood Program or, the total compensation due Contractor under the contract. If the contract does not include construction of, or additions to, aboveground buildings or structures but does include the installation of machinery or equipment in a building or structure which is located in a special flood hazard area as defined by the National Flood Insurance Program, flood insurance must be afforded for the lesser of the total insurable value of the machinery or equipment or the maximum amount of flood insurance coverage available under the National Flood Program.
- d. The insurance provided by Contractor pursuant to this contract shall apply on a primary basis and any other insurance or self-insurance maintained by the Owner or an Owner's official, officer, agent or employee shall be excess of and not contributing with the insurance provided by or on behalf of the Contractor.
  - e. Except with respect to the Property Insurance, the coverage maintained by the Contractor shall apply on a first dollar basis without application of a deductible or self-insured retention.
  - f. Compliance with the insurance requirements of this contract shall not limit the liability of the Contractor, its subcontractors, employees, or agents to the Owner or others. Any remedy provided to the Owner or the Owner's officials, officers, agents and employees by the insurance shall be in addition to and not in lieu of any other remedy available under this contract or otherwise.
  - g. Indemnification.
    - (1) The Contractor shall indemnify, defend and hold harmless the JPA, its employees and elected officials, from all liabilities, damages, losses, costs and expenses of whatsoever kind or nature, including, but not limited to, reasonable attorney's fees, reasonable expert witness fees and court costs (all of which are collectively referred to as "Damages") to the extent such Damages are caused by the negligence, recklessness or intentional wrongful conduct of the Contractor and/or persons employed or utilized by the Contractor in the performance of this Agreement.



## **SECTION V.: INSURANCE AND BOND (... Continued)**

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- (2) In any and all claims against the Owner or its members, directors, officers, employees, representatives and agents by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, this indemnification under this Sub-article "g." shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.
- (3) In addition to those indemnities previously described, the obligations of the Contractor under this Sub-article "g." shall extend to the liability of the Consultant or Consultants, if any, on this Project, and the Consultant's members, directors, officers, employees, representatives or agents in the same manner as applicable to the Owner. Provided, however, the obligations of the Contractor under this Sub-article "g." shall not extend to the liability of the Consultant, its members, directors, officers, employees, representatives or agents arising out of: 1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or 2) the giving of or the failure to give directions or instructions by the Consultant, its members, directors, employees, representatives or agents provided such giving or failure to give is the primary cause of the injury or damage.
- (4) The remedy provided to the Owner and the Consultant and their respective members, directors, officers, employees, representatives and agents by this indemnification shall be in addition to and not in lieu of any other remedy available under this contract or otherwise. This indemnification obligation shall not be diminished or limited in any way to the total limits of insurance required in this contract or otherwise available to Contractor or any sub-contractor.
- (5) To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner its officers, agents, volunteers, and employees from and against all claims, damages, losses, and expenses, including but not limited to all fees and charges of engineer(s), architect(s), attorney(s) and other professional(s), court costs, or other alternative dispute resolution costs arising out of, resulting from, or otherwise but for the performance or furnishing of Proposer's work or services under this Invitation to Bid; provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease, death or personal injury, or property damage, including the loss of use or diminution in value resulting there from; but only to the extent caused in whole or in part by the actual or alleged negligent acts, errors, or omissions of Contractor,

## **SECTION V.: INSURANCE AND BOND (... Continued)**

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Contractor's Subcontractor(s) or anyone directly or indirectly employed or hired by Contractor, or anyone for whose acts Contractor may be liable. The Owner reserves the right, but not the obligation, to participate in defense without relieving Contractor of any obligation hereunder.

- h. Contractor's Pollution Liability
- (1) As evidence of compliance with the insurance required by Paragraph "c.", Subparagraphs 6 (Contractor's Pollution Liability), the Contractor shall furnish the Owner with a Certificate of Insurance Compliance (Form 101-87) signed by an authorized representative of the insurer(s) providing the coverage. The Contractor agrees the policy shall include a minimum three (3) year Discovery (tail) reporting period, and a retroactive date that equals or precedes the effective date of the Contract, or the performance if Work hereunder. This coverage can be provided on a Per-Project basis.

### **2. Surety Bonds.**

- a. General. All bonds shall be written through a reputable and responsible Surety bond agency licensed to do business in the State of Florida and with a Surety company or corporation meeting both Subparagraphs (1) and (2) below. All bonds, including bid bonds and contract bonds shall have affixed to them a certified copy of current Power of Attorney of the Attorney-in-Fact who executed the bond on behalf of the Surety. Bond requirements in excess of \$500,000, including bid bonds and contract bonds, shall be written with a Surety company meeting the specifications of both Subparagraphs (1) and (2). In the event the bond requirement does not exceed \$500,000, bonds written with a Surety company meeting either a) the requirements of Subparagraphs (1) and (2) or, alternatively, b) the requirements of Subparagraph (3) shall be acceptable.

- (1) Having a minimum rating in the latest revision of Best's Insurance Reports of:

<b>Contract Amount</b>	<b>Policyholder</b>	<b>Financial</b>
Under \$250,000	B+	Class III
\$250,000.01 to \$2,500,000	B+	Class IV
\$2,500,000.01 to \$5,000,000	A-	Class IV
Over \$5,000,000.01	A	Class V

- (2) Holding a current certificate of authority as acceptable Surety on federal bonds in accordance with U. S. Department of Treasury, Circular 570, current revision. If the amount of the bond exceeds

## **SECTION V.: INSURANCE AND BOND (... Continued)**

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the underwriting limitations set forth in the Circular, in order to qualify, the net retention of the Surety Company shall not exceed the underwriting limitation in the Circular and the excess risk must be protected by co-insurance, reinsurance, or other methods. Further, the Surety Company shall provide the Owner with evidence satisfactory to the Owner that such excess risk has been protected in an acceptable manner.

- (3) In the event the bond requirement does not exceed \$500,000, bonds with a Surety Company in compliance with the following requirements shall be acceptable:
  - (a) The Surety Company holds a certificate of authority authorizing it to write Surety bonds in Florida.
  - (b) The Surety Company has twice the minimum surplus and capital required by the Florida Insurance Code at the time the invitation to bid is issued.
  - (c) The Surety Company is otherwise in compliance with the provisions of the Florida Insurance Code.
  - (d) The Surety Company holds a currently valid certificate of authority issued by the United States Department of the Treasury under Section 9304 to 9308 of Title 31 of the United States Code.

In order to qualify as an acceptable Surety company under this Subparagraph (3), a Certificate and Affidavit for Surety Bond Insurer (Form CASBI included in the contract documents) shall be executed by an officer of the Surety bond insurer as evidence that a Surety Company is in compliance with the foregoing requirements and shall be submitted with the bond.

- b. Agent. The name of the agent for the Surety Company shall be listed in the prescribed space on both the bid bond and the contract bond.
- c. Bid Bonds. Refer to "Supplemental Instructions to Bidders," Article 6 "Bid Guaranty." Provisions of this Article apply to bid bonds. Surety's standard bond form for State of Florida is acceptable.
- d. Contract Bonds. The Contractor, at its own expense, shall furnish a Performance Bond, and a Statutory Payment Bond as security for the faithful performance under the contract documents. The bonds shall be in an amount at least equal to the contract price, in the form provided in these contract documents, and with such Surety as is acceptable to the Owner. Such bonds shall indemnify the Owner for damages associated with unexcused late delay of the project.
- e. Additional Bond. It is further mutually agreed between the parties hereto that if, at any time during the contract period, the Surety or Sureties upon the bonds ceases to meet the specified minimum criteria or otherwise become financially unsatisfactory, or if for any reason, such bond ceases to

## **SECTION V.: INSURANCE AND BOND (... Continued)**

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be adequate to cover the performance of the Work, the Contractor shall immediately, and at its expense, furnish an additional bond or replacement bond in such form, amount, and with such Surety or Sureties as shall be satisfactory. In such event, no further payments to the Contractor shall be deemed to be due under this contract until such new or additional security for the faithful performance of the Work shall be furnished in manner and form satisfactory to the Owner.

# SPECIAL CONDITIONS

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## **SPECIAL CONDITIONS**

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The "General Conditions," Section I through Section V, and the articles of this section shall apply to the Contractor and all Subcontractors. The "Special Conditions" supplement and/or amend the "General Conditions" and other contract documents as necessary for this project. Any article, paragraph, or subparagraph in the "General Conditions" or other contract documents not so supplemented or amended by this section shall remain in effect.

### **1. Time for Completion**

The Contractor shall totally and finally complete all work not later than **150** calendar days after receipt of Notice to Proceed.

### **2. Liquidated Damages**

- a. The parties agree that at the time of entering into this Agreement the parties cannot determine the precise amount of damages that JAXPORT will suffer in the event Contractor is unable to perform its obligations under this Agreement. The parties agree that the damages suffered by Jaxport under such circumstances are uncertain and difficult to ascertain. Therefore, the parties agree that this sum is fair and reasonable and represents liquidated damages and is not a penalty.
- b. Should the Contractor or, in case of its default, the Surety fail to complete the work within the time stipulated in the contract, or within such extra time as may have been granted by the Owner, the Contractor or, in case of its default, the Surety shall pay to the Owner not as a penalty but as Liquidated Damages the amount so due as determined below.
- c. For each calendar day that any part of the work remains uncompleted after the expiration of the contract time, the sum per day specified below shall be deducted by the Owner from monies due the Contractor, not as a penalty but as agreed Liquidated Damages representing loss to the Owner for additional cost of contract administration, inconvenience and additional cost of operations only due the Owner as a result of the Contractor's late completion. If no money is due the Contractor, the Owner shall have the right to recover said sum or sums from the Contractor, from the Contractor's Surety, or from both. The assessment of Liquidated Damages shall be in addition to actual damages or claims to the Owner except for inconvenience, administrative costs, and additional costs of operation.
- d. Liquidated Damages for failure to complete the work within the time specified for the completion of the work shall be:

**\$3,786 per calendar day**
- e. Permitting the Contractor to continue and to finish the work, or any part of it, after the expiration of the contract time allowed including extensions of time granted to the Contractor shall, in no way, act as a waiver on the part of the Owner, of the Liquidated Damages due under the contract.

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- f. In case of default of the contract and the completion of the work by the Owner, the Contractor and its Surety shall be liable for the Liquidated Damages and delay under the contract, but no Liquidated Damages shall be chargeable for any delay in the final completion of the work by the Owner due to any unreasonable action or delay on the part of the Owner.

### **3. Warranty**

The Contractor agrees to correct or replace any defective materials or workmanship for a period of **One (1) Year** from execution of Certificate of Contract Completion and Contractor's Affidavit to Owner. The Technical Specifications may require a longer warranty period for all or portions of the Work.

### **4. Permits**

The Contractor shall secure permits and licenses as specified in paragraph "f" of the "Contractor's Responsibility" section of the "General Conditions". The Owner will obtain State and Federal permits for permanent construction, and has applied for Federal and State dredge and fill permits and other local permits for this project, if applicable.

The Contractor shall obtain the City Building Permit and any permits required for the construction of temporary structures, and temporary dredging and filling which may be necessary to facilitate its construction scheme and operations.

### **5. Owner's Minimum Project Work Rules**

See FORM PWR

### **6. Existing Soil Conditions**

The Owner has, for its own use, made borings at or near the site of the Work. Any boring data shown in these contract documents is presented only as information which indicates certain conditions found and limited to the exact locations and on the dates indicated. Any interpretations or conclusions drawn by the Contractor from such data shall be its own and the Owner makes no representation or guarantee concerning the accuracy or completeness of such data. The Contractor shall be responsible for making its own determination of subsurface conditions prior to bidding and shall not assume that any of the aforesaid boring data will necessarily be found or maintained.

### **7. Site Conditions**

The Contractor shall visit the location of the Work and make such investigations of existing conditions above or below the surface of the ground as it may deem necessary for the proper and timely performance of its work, including but not limited to field measurements, soil investigations, laydown areas, interferences and general logistics. No oral representations by any persons regarding such

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conditions either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

## **8. Structure over Navigable Waters**

Where structures are erected in, adjacent to, or over navigable waters, the Contractor shall observe all regulations and instructions of Federal and other authorities having control over such waters. The Contractor shall not obstruct navigation channels without permission from the proper authority and shall provide and maintain navigation lights and signals in accordance with the Federal requirements for the protection of the structure, or falsework, and of navigation.

## **9. Welding, Burning, and Hot-work Regulations**

The U. S. Coast Guard requires JAXPORT to maintain "welding and hot-work" permits valid for 3-year periods that allow JAXPORT and its Contractors to complete any such work on its marine terminal docks. The area of the terminal covered by this program extends landward from the face of the wharf 150 feet. Beyond 150 feet is covered by rules and regulations of the Jacksonville Fire Marshal's Office, and does not require permitting.

- a. The Contractor must contact the designated JAXPORT terminal representative who will inspect the project area in accordance with, and issue the JAXPORT Cutting-Welding-Hot-work Authorization Form.
- b. Once JAXPORT representative has issued the Authorization Form, he will give the Contractor a copy of the U. S. Coast Guard permit, which must be posted by the Contractor in the vicinity of the Contractor's project.
- c. After receiving the completed Authorization Form and posting the U. S. Coast Guard permit in the job area, the Contractor must then contact the U. S. Coast Guard Marine Safety Office, Jacksonville, FL, supplying the following information:
  - (1) U. S. Coast Guard Hot-work permit number
  - (2) The types of hot-work to be accomplished
  - (3) The exact location of the hot-work at the facility.
  - (4) Anticipated duration of the hot-work
  - (5) Type and location of any dangerous cargo on the facility.
  - (6) Name/phone number of the point of contact at the facility.
  - (7) The name of the Contractor.
- d. The Marine Safety Office of Jacksonville will issue a reference number allowing the Contractor to use the JAXPORT Welding and Hot-work Permit" for up to a period of 7 days.
- e. Steps a. through d. must be repeated each 7-day period thereafter until the welding and hot-work portions of the contract is complete.



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It is the Contractor's responsibility to comply with all federal, state and local laws.

### **10. Tax Savings Program, General.**

Goods and services purchased directly by the Contractor are subject to all State and/or local taxes. All items, materials, supplies and/or equipment incorporated and/or used in the construction of the project and paid for by the Contractor are, consequently, subject to all applicable taxes.

It is the Contractor's sole responsibility to incorporate any and all applicable taxes into the bid proposal including all railroad materials and equipment for this project without regard to the optional purchasing procedures hereinafter defined. JAXPORT is not a Railroad Company or Railroad Operator, therefore the railroad tax exemption rules do not apply to JAXPORT.

#### **JAXPORT Tax Exemption**

Chapter 212 of the Florida Statutes, however, provides JAXPORT with an exemption from the payment of sales taxes for all procurements made directly by JAXPORT.

This section contains the specific administrative and/or purchasing procedures that the Contractor shall follow for the purpose of facilitating JAXPORT's procurement of major items to the extent that JAXPORT may so elect and thereby obtain any benefit that may accrue to JAXPORT from the sales tax exemption permitted by the Florida Statutes.

#### **Administrative and/or Purchasing Procedures.**

The following procedures are hereby established to permit JAXPORT to purchase in its own name and for its own account some of the items, equipment, materials and supplies which will form part of the work for which the Contractor is obligated to construct under this contract.

Within a period of time that will not adversely impact the orderly progression of the Project, agreed upon by both JAXPORT and Contractor following notice of contract award, the Contractor shall prepare and submit to the Project Manager an itemization of all items, materials, supplies and/or equipment that will be incorporated into this Project for which the Contractor has a firm quotation and as hereinafter specified. If the Contractor does not have a firm quotation for any items at the time the initial list is prepared, the Contractor shall update the previously submitted list immediately upon obtaining the necessary quotation.

This list shall include all items identified on the plans or in the "Products" section of each Technical Specification that individually or collectively cost \$10,000 or more and would normally be ordered from one supplier under a single Purchase Order. Items that are purchased on an "as needed" basis over time under multiple Purchase Orders, each of which are less than \$10,000, may be excluded from this list even though the aggregate total cost of all items in this category exceeds the \$10,000 minimum.

- a) The list must contain the following:

- 
1. A description of item, material, supplies and/or equipment to be procured. This description shall be by common name and be referenced to the technical specification and CSI code under which it is defined.
  2. The quantity of the item, material, supplies and/or equipment to be procured, the unit cost applicable to each, and the appropriate State of Florida and local (Duval County) sales tax rate in which the procurement is delivered.
- b) Within five (5) working days following receipt of the proposed purchasing list or supplemental firm quotation from the Contractor, the Project Manager will notify Contractor of JAXPORT's decision as to which items will be purchased directly by JAXPORT.
- c) Purchase Orders for the selected items will be requested from the Purchasing Department using the Contractor's Letter of Quotation to identify the Vendor name, Contractor, and Not to Exceed amount of Purchase Order. Each Purchase Order will be assigned a number based on the project number and sequence number of Purchase Orders issued.

It shall be understood by the Contractor that these Purchase Order Forms will be issued for the sole and specific purpose of procuring the selected items for incorporation in the Work for which the Contractor is obligated to construct under this contract.

- d) Purchase Orders issued with Letter of Quotation attached, will be forwarded by Project Manager to Contractor with request to complete Purchase Order as to item(s) ordered, delivery instructions, and signature of Contractor.

The Purchase Order, however, shall omit any Florida State or local sales tax. In lieu thereof, JAXPORT's Consumer's Certificate of Exemption No. 85-8012543323C-8 shall be attached to the Purchase Order prior to distribution.

Each Purchase Order shall be completed and countersigned by the Contractor. The Contractor shall be responsible for assuring that the requirements for the procurement, as detailed on the plans and in the Technical Specifications, are satisfied.

- e) Contractor will then return the completed Purchase Order(s) to JAXPORT for countersignature by the Project Manager approving purchase as to conformity to specifications; and to the Purchasing Department for countersignature by the Purchasing Manager.
- f) After obtaining all signatures, the Project Manager shall simultaneously distribute the original to the Vendor or supplier with copies to the Purchasing Department, the Contractor, and the Finance Department.
- g) The Contractor and Owner agree that it is to their mutual benefit that prosecution of the Work proceed with due diligence and without interruption. Vendors of selected items shall therefore make deliveries as directed by the

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Contractor, when needed, to enable the Contractor to perform his scheduled obligations.

- h) JAXPORT and Contractor agree that the Contractor will receive, receipt for, inspect, accept and to the extent necessary, unload, store, and protect the selected items at either the jobsite or other place as the Contractor may deem appropriate until brought to the worksite by the Contractor.

The Contractor shall accept delivery of selected items from the appropriate Vendor as conforming to both the terms and conditions of the Purchase Order and applicable Technical Specifications.

- i) Upon receipt of an invoice for selected items delivered, the Contractor will write on the face of the invoice that it is "okay for payment", sign, and date invoice. The invoice is then submitted in E-Builder to JAXPORT's Project Manager for authorization for payment.
- j) Upon receipt of a properly approved invoice, JAXPORT shall pay the Vendor of the selected items the amount due as defined by the Purchase Order but without any Florida State or local sales tax.

Where the Contractor has special terms with a Vendor to receive a discount if paid within a 10, 30 days' time and if the invoice is received within that time frame, invoices will be processed and the discount taken of which JAXPORT will receive the benefit. The Contractor will be advised by mail when an invoice is forwarded to the Finance Department for payment and the amount to be paid, showing discounts taken by JAXPORT, if any. Otherwise, invoices will be paid within 30 days from date on invoice.

- k) In preparation of its Monthly Progress Payment request, the Contractor shall show on Line 3 of the Application for Payment the total amount of purchase orders issued under this Tax Savings Program. On Line 4 of the Application for Payment, the Contractor will show the amount of tax savings. Line 5 of the Application is the total of Lines 3 and 4.
- l) An adjustment shall be summarized by reporting at the end of the contract and a Change Order to the contract will be made to close out any remaining balances on purchase orders based on the total of payments against each purchase order made for selected items, plus the total sales tax computed. A final reconciliation change order will be issued on all tax savings purchase orders remaining balances based on payments plus sales tax.
- m) Notwithstanding JAXPORT's payment for selected items, as provided for above, the Contractor assumes full responsibility for any change in price and liability associated with selecting and ordering the proper quantity and type of materials and equipment for scheduling the appropriate delivery date, selection of the appropriate Vendor or supplier, the correctness of the Purchase Order and receipt report and the storage, delivery, and protection of the equipment and/or material.

- n) The Contractor shall use Owner approved Purchase Orders only for purchasing goods, equipment, materials and supplies previously designated or selected by JAXPORT. The Contractor shall immediately notify and consult with JAXPORT relative to any change or modification to any previously approved selected item(s). The Contractor shall account for every Purchase Order including those voided for any reason, and shall return all voided and unused Purchase Order Forms prior to the final contract payment.
- o) If the Contractor enters into one or more subcontracts with respect to any portion of the Work, the Contractor will require that each subcontractor allow, under the terms of their respective subcontracts, JAXPORT to purchase selected item(s) in the same manner as provided above with respect to the Contractor.

The Contractor shall sign all Purchase Orders for selected item(s) required by the subcontractor to complete the portion of the Work required by the subcontract.

**11. Progress Photographs**

Monthly Applications for Payment (see Section IV, Paragraph 3. of the "General Conditions") shall be accompanied by not less than 5 color photographs, approximately 3 inches by 5 inches in size showing current status of various areas and components of the Project. Photographs are to be mounted in a report form with descriptive captions, and sequentially numbered and uploaded in E-Builder as an attachment to each AFP. The Progress Photograph Report shall contain the following certification on its front cover which requires signature of the Contractor's responsible official.

<p><b>THIS IS TO CERTIFY THAT THE ATTACHED PHOTOGRAPHS ACCURATELY REPRESENT THE ACTUAL STATUS AND CONDITION ON</b>  <b>[DATE] OF THE [CONTRACT</b>  <b>TITLE] BEING CONSTRUCTED FOR THE</b>  <b>JACKSONVILLE PORT AUTHORITY UNDER CONTRACT NO.</b>  <b>[CONTRACT NO.]</b></p> <p><b>FIRM:</b> _____</p> <p><b>SIGNATURE:</b> _____</p> <p><b>NAME TYPED:</b> _____</p> <p><b>TITLE:</b> _____</p> <p><b>DATE:</b> _____</p>
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## **REQUIRED LIMITS OF INSURANCE**

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The minimum amounts of insurance (inclusive of any amounts provided by an umbrella policy) shall be as follows:

### **WORKERS' COMPENSATION/EMPLOYERS' LIABILITY**

Part One - There shall be no maximum limit (other than as limited by the applicable statute) for liability imposed by the Florida Workers' Compensation Act, or any other coverage required by the contract documents, which are customarily insured under Part One of the standard Workers' Compensation Policy.

Part Two - The minimum amount of coverage required by the contract documents which are customarily insured under Part Two of the standard Workers' Compensation Policy shall be:

- \$100,000 (Each Accident)
- \$500,000 (Disease-Policy Limit)
- \$100,000 (Disease-Each Employee)

### **COMMERCIAL GENERAL LIABILITY**

The limits are to be applicable only to work performed under this contract and shall be those that would be provided with the attachment of the Amendment of Limits of Insurance (Designated Project or Premises) endorsement (ISO Form CG 25 01) to a Commercial General Liability Policy with the following minimum limits:

General Aggregate	\$2,000,000
Products/Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury, Each Occurrence	\$1,000,000
Bodily injury and Property Damage (each occurrence)	\$1,000,000

Owner shall be included as an additional insured under the CGL policy for both ongoing and completed operations. ISO additional insured endorsement CG 20 10 10/1 addition date (for ongoing operations) and CG 20 37 10/1 addition date (for completed operations), or substitute endorsements providing equivalent coverage, will be attached to Contractors CGL.

### **CONTRACTORS POLLUTION LIABILITY**

## **REQUIRED LIMITS OF INSURANCE**

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\$ 1,000,000 per loss

\$ 1,000,000 Annual Aggregate

Contractors Pollution Liability coverage will be required for any Environmental/Pollution related services including but not limited to testing, design, consulting, analysis, or other consulting work, whether self-performed or subcontracted, contractor will also maintain Contractor's Pollution Liability coverage. Such coverage will include bodily injury, sickness, disease, mental anguish or shock sustained by any person, including death; property damage including physical injury to or destruction of tangible property including the resulting loss of use thereof, clean-up costs, and the loss of use of tangible property that has not been physically injured or destroyed; defense including costs, charges and expenses incurred in the investigation, adjustment or defense of claims for such compensatory damages; coverage for losses caused by pollution conditions that arise from the operations of the contractor.

### **BUSINESS AUTO POLICY**

ISO Form Number CA 00 01 covering any auto (code 1), or if contractor has no owned autos, hired (Code 8) and non-owned autos (Code 9), with limit no less than \$1,000,000 per accident for bodily injury and property damage.

### **UMBRELLA LIABILITY**

\$5,000,000 per Occurrence

\$5,000,000 Aggregate

The umbrella coverage will need to have drop down insurance coverage for workers' compensation, commercial general liability, contractors pollution if placed separately then in CGL and auto coverage.

Failure of Owner to demand such certificate or other evidence of full compliance with these insurance requirements, or failure of Owner to identify a deficiency from evidence that is provided, shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

Failure of Contractor to maintain the required insurance shall constitute a default under this Agreement and, at Owner's option, shall allow Owner to terminate this Agreement.

The contractor's CGL coverage will be primary and non-contributory.

A waiver of subrogation is required for Workers Compensation, GL, contractors' pollution and Auto Liability. Contractor waives all rights against Owner and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by any of the policies of insurance maintained pursuant to this Subcontract. Provide the risk manager with a blanket waiver of subrogation endorsement certificate.

Prior to commencing Work, Contractor shall furnish Owner with certificates of insurance, and copies of additional insured endorsements, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth below.

## **REQUIRED LIMITS OF INSURANCE**

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Cross-Liability Coverage If Contractor's liability policies do not contain the standard ISO separation of insured's provision, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

Subcontractor's' Insurance. Contractor shall cause each subcontractor employed by Contractor to purchase and maintain insurance of the type specified in this agreement. When requested by Owner, Contractor shall furnish to Owner copies of certificates of insurance evidencing coverage for each subcontractor

No Representation of Coverage Adequacy by requiring the insurance as set out in this Agreement, Owner does not represent that coverage and limits will necessarily be adequate to protect Contractor, and such coverage and limits shall not be deemed as a limitation on Contractor's liability under the indemnities provided to Owner in this Subcontract.

If the Contractor/Consultant maintains broader coverage and/or higher limits than the minimums shown above, the Owner requires and shall be entitled to the broader coverage and/or the higher limits maintained by the contractor/consultant. Any available insurance proceeds in excess of the specified minimum limits of insurance.

# CERTIFICATE OF INSURANCE COMPLIANCE

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**ADDRESSEE**

**Jacksonville Port Authority  
 Post Office Box 3005  
 Jacksonville, FL 32206-0005  
 Attn: Engineering Services  
 Contract Specialist**

**NAME INSURED**

**Name and Address of Insured:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

By executing this Certificate of Insurance Compliance, the contractor warrants to the addressee that: (1) the undersigned is an authorized representative of the insurers identified in the certificate, (2) the policies or binders described in the certificate have been issued to the above named insured and are in force at this time, (3) the policies or binders as issued provide coverage in full compliance with the insurance requirements contained in the contract documents for the above referenced project with the minimum limits of coverage as specified in the Required Limits of Insurance (Form 100-87) and the contract documents, and (4) the policies or binders will not be changed, cancelled, non-renewed, or renewed with more restrictive terms and conditions so as to affect this certificate until at least thirty (30) days after written notice of such change, cancellation or nonrenewal has been received by the addressee.

Compliance with these insurance requirements shall not relieve or limit the Contractor's liabilities and obligations under this contract. Failure of Addressee to demand such Certificate of Insurance or other evidence of full compliance with these insurance requirements or failure of Addressee to identify a deficiency from evidence provided will not be construed as a waiver of the Contractor's obligation to maintain such insurance.

**DESCRIPTION OF INSURANCE POLICIES SUBJECT TO THIS CERTIFICATE**

Complete the following section for each of those coverages for which the contractor is making the above warranty. The sum of the limits shown for the primary and excess insurers must equal or exceed the minimum limits required by the contract.

<b>Employer's Liability/Workers' Compensation Limits</b>	<b>Primary Issuer ID:</b> _____	<b>First Excess ID:</b> _____	<b>Second Excess ID:</b> _____
Part One	\$	\$	\$
Part Two (Each Accident)	\$	\$	\$
Disease-Policy Limit			
Disease-Each Employee	\$	\$	\$

<b>Longshoremen's and Harbor Workers'</b>	<b>Primary Issuer ID:</b>	<b>First Excess ID:</b>	<b>Second Excess ID:</b>



<b>Compensation</b>	_____	_____	_____
	\$ _____	\$ _____	\$ _____

<b>Commercial General Liability Limits</b>	<b>Primary Issuer ID:</b> _____	<b>First Excess ID:</b> _____	<b>Second Excess ID:</b> _____
General Aggregate	\$ _____	\$ _____	\$ _____
Products/Completed Operation Aggregate	\$ _____	\$ _____	\$ _____
Personal and Advertising Injury, Each Occurrence	\$ _____	\$ _____	\$ _____
Body injury and property damage	\$ _____	\$ _____	\$ _____
Fire damage (any one fire)	\$ _____	\$ _____	\$ _____
Medical expense (any one person)	\$ _____	\$ _____	\$ _____

<b>Business Auto Liability Limits</b>	<b>Primary Issuer ID:</b> _____	<b>First Excess ID:</b> _____	<b>Second Excess ID:</b> _____
Each Occurrence	\$ _____	\$ _____	\$ _____
Annual Aggregate	\$ _____	\$ _____	\$ _____

<b>Protection for Owner's Liability Limits</b>	<b>Primary Issuer ID:</b> _____	<b>First Excess ID:</b> _____	<b>Second Excess ID:</b> _____
Each Occurrence			
Annual Aggregate			

**Or** Commercial General Liability Coverage Contains the Described Additional Insured Endorsement YES\_\_\_ NO\_\_\_

<b>Property Insurance Risk</b>	<b>Primary Issuer ID:</b> _____	<b>First Excess ID:</b> _____	<b>Second Excess ID:</b> _____

Builder's Risk			
Installation Floaters			
Railroad Protective Liability Coverage			

**POLICY AND INSURER INFORMATION**

<b>ID</b>	<b>Name of Insurer</b>	<b>Policy Number</b>	<b>Expiration Date</b>	<b>Best's Rating</b>	<b>Authorized in Florida (Y/N)?</b>

Authorized Representative's Name: \_\_\_\_\_  
 (Print and then sign)

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

Name of Insurance Company: \_\_\_\_\_

Address of Insurance Company: \_\_\_\_\_

JACKSONVILLE PORT AUTHORITY

SUMMARY AND CERTIFICATION  
"REVISED" APPLICATION FOR PAYMENT NO.

PROJECT NAME:  
PROJECT LOCATION: DATE:  
JPA CONTRACT NO: C-1631A A/E PROJECT NO.:  
CONTRACTOR:  
APPLICATION PERIOD: TO:

1. ORIGINAL CONTRACT SUM.....	\$ _____
2. MODIFICATION BY CHANGE ORDERS (THRU C.O. #5).....	\$ _____
3. LESS: Purchase Orders issued by JPA for material selected for tax savings.....	\$ _____
4. LESS: State and Local Tax savings on material purchase orders.....	\$ _____
5. LESS: TOTAL PURCHASE ORDERS & TAX SAVINGS.....	\$ _____
(Line 3 plus Line 4)	
6. CURRENT CONTRACT VALUE.....	\$ _____
7. TOTAL COMPLETED & STORED TO DATE.....	\$ _____
8. RETAINAGE WITHHELD:	
_____ % of Completed Work	
_____ % of line 7).....	\$ _____
10. TOTAL EARNED LESS RETAINAGE WITHHELD.....	\$ _____
11. LESS PREVIOUS PAYMENTS RECEIVED.....	\$ _____
12. AMOUNT DUE THIS PAYMENT.....	\$ _____

SUMMARY OF APPROVED CHANGE ORDERS			SUMMARY TAX SAVING'S PURCHASE ORDERS			CONTRACTOR'S CERTIFICATION
No.	Date Appd.	Value (+ -)	No.	Date Appd.	Value (+ -)	
						The undersigned CONTRACTOR certifies that: (1) all items and amounts shown above are correct; (2) all Work performed and materials supplied fully comply with the terms and conditions of the Contract Documents; (3) all previous progress payments received from JAXPORT on account of Work done under the Contract referred to above have been applied to discharge in full all obligations of CONTRACTOR incurred in connection with Work covered by prior Applications for Payment; (4) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to JAXPORT at time of payment free and clear of all liens, claims, security interests and encumbrances; and (5) if applicable, the CONTRACTOR has complied with all provisions of Article V of the Specification documents including the payment of a pro-rata share to JSEB, MBE, WBE, DBE and/or SBA Firms of all payments previously received by the CONTRACTOR.
TOTALS: \$ _____			TOTALS: \$ _____			

BY THE OWNER'S CONSULTANT

I hereby certify that, to the best of my knowledge, and belief, based in part on actual site observations, the Contractor has satisfactorily completed the work represented in this Application for Payment in accordance with requirements of the contract documents, and payment of the current amount due to the Contractor is recommended.

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

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

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

JPA APPROVAL FOR PAYMENT

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

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

Project Acct.: \_\_\_\_\_

FORM AFP-1

State of Florida, County of Duval

Subscribed and sworn to **before me this**

\_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_ -

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

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

who is/are personally known to me or has/have produced \_\_\_\_\_ (type of identification)

as identification.

Notary Signature: \_\_\_\_\_ -

Commission No.: \_\_\_\_\_ -

(Name of Notary typed,

Printed or Stamped)

My Commission Expires: \_\_\_\_\_ -(SEAL ABOVE)

REVISED 09/12/2013

**CONTINUATION SHEET**

CONTRACTOR NAME:	APPLICATION NO:
CONTRACTOR'S CONTRACT NO:	APPLICATION DATE:
PROJECT NAME:	DATE OF NOTICE TO PROCEED:
PERIOD FROM / TO:	CONTRACT COMPLETION DATE:

PERCENT OF TIME USED TO DATE: % PERCENT COMPLETE TO DATE: %										
A	B	C	D	E	F	G	H	I	J	K
DELIVERABLES	ITEM NO. CSI CODES	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN E OR F)	TOTAL COMPLETED AND STORED TO DATE (E+F+G)	% (H = D)	BALANCE TO FINISH (D - H)	RETAINAGE
				FROM PREVIOUS APPLICATION (E + F)	THIS PERIOD					
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00
							\$0.00	#DIV/0!	\$0.00	\$0.00

CHANGE ORDERS ISSUED TO DATE										
						N/A	\$0.00	#DIV/0!	\$0.00	\$0.00
						N/A	\$0.00	#DIV/0!	\$0.00	\$0.00
						N/A	\$0.00	#DIV/0!	\$0.00	\$0.00
						N/A	\$0.00	#DIV/0!	\$0.00	\$0.00
						N/A	\$0.00	#DIV/0!	\$0.00	\$0.00
						N/A	\$0.00	#DIV/0!	\$0.00	\$0.00
						N/A	\$0.00	#DIV/0!	\$0.00	\$0.00
<b>GRAND TOTALS</b>							\$0.00	#DIV/0!	\$0.00	\$0.00

SUMMARY LINE ITEM DEDUCTIONS FOR TAX SAVINGS PURCHASE ORDERS ISSUED AND PAID TO DATE REPORT										
A	B	D	E	F	G	H	I	J	K	L
DATE	TOTAL # OF TSPO'S OF REPORT	SUB-TOTAL MATERIAL TSPO'S ISSUED - SCHEDULED VALUE DEDUCT (\$ )	TOTAL ESTIMATED SALES TAX	TOTAL TAX SAVINGS P.O. DEDUCTION (D + E)	VENDORS PAID TO DATE		TOTAL SALES TAX DEDUCTION TO DATE	TOTAL MATERIALS & TAXES RECEIVED AND STORED TO DATE (G + H + I)	BALANCE TO FINISH (F - J)	% OF PURCHASED MATERIALS COMPLETED (J ÷ F)
	ISSUED TO DATE				PREV. PERIOD	THIS PERIOD				
			\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	#DIV/0!	\$0.00	\$0.00



**C-1631A**  
**Request for Information**

**Date Created:** \_\_\_\_\_

**Answer Company** \_\_\_\_\_ **Answer By** \_\_\_\_\_ **Author Company** \_\_\_\_\_ **Authored By** \_\_\_\_\_

**Co-Respondent** \_\_\_\_\_ **Author RFI Number** \_\_\_\_\_

**Subject** \_\_\_\_\_ **Discipline** \_\_\_\_\_ **Category** \_\_\_\_\_

**Question** \_\_\_\_\_ **Date Required** \_\_\_\_\_

**Submitted By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Suggestion** \_\_\_\_\_

**Answer** \_\_\_\_\_ **Date Answered:** \_\_\_\_\_

**Submitted By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

# **AGREEMENT BETWEEN OWNER AND CONTRACTOR**

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This Agreement is entered into as of this \_\_\_\_ day of \_\_\_\_\_, 2021 by and between:

**The OWNER:**

**Jacksonville Port Authority  
2831 Talleyrand Avenue  
Post Office Box 3005  
Jacksonville, FL 32206-0005  
(904) 357-3065**

**ATTN: Procurement Services**

**And the CONTRACTOR:**

**Awarded Contractor Name  
Awarded Contractor Address  
Awarded Contractor Phone  
Number  
Insert Vendor Number**

**For the following WORK:**

**Contract No.: C-1631A  
Project No.: T2018.01  
TMT WAREHOUSE #1 RE-ROOF  
TALLEYRAND MARINE TERMINAL**

**Designed by CONSULTANT:**

**JACOBS ENGINEERING GROUP**

The OWNER and CONTRACTOR agree as set forth below:

## **ARTICLE 1. SCOPE OF WORK**

The Contractor agrees to furnish all materials, equipment, supervision and perform all labor and services for Contract No. **C-1631A** as shown on the contract drawings and described in the project specifications, each document of which is incorporated herein by reference and listed under Article 2 hereof.

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## ARTICLE 2. CONTRACT DOCUMENTS

The contract documents, which constitute the entire Agreement between the Owner and the Contractor, are enumerated below and all are as fully a part of the contract as if attached to this Agreement Form or repeated herein.

1. Agreement between Owner and Contractor.
2. Exhibits and Attachments to this Agreement.
3. Contractor's Bid, Performance Bond, and Statutory Payment Bond.
4. Contractor's Bid Form.
5. Invitation to Bidders.
6. Supplementals Instruction to Bidders.
7. Conflict of Interest Certificate.
8. General Conditions of the contract.
9. Supplementary Conditions of the contract.
10. Special Conditions of the contract.
11. Technical Specifications.
12. Drawings entitled: \_\_\_\_\_
13. Addenda Nos. \_\_\_\_\_ through \_\_\_\_\_, inclusive.
14. Change Orders, duly authorized and delivered after execution of this Agreement.
15. Notice of Award.
16. Notice to Proceed.
17. Certificate of Contract Completion and Contractors Affidavit to Owner.
18. Certificate of Substantial Completion.
19. Approved Contractor's Construction Schedule for the Work.
20. Contractor's Schedule of Values for the Work.
21. Contractor's Request for Information Form.
22. Owner's Minimum Project Work Rules.
23. Required Limits of Insurance.
24. Certificate of Insurance Compliance.
25. Application for Payment Forms.
26. Form of Consent of Surety Company to Final Payment.
27. DBE Participation Goal – (**ENCOURAGED**)

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### **ARTICLE 3. CONTRACT TIME**

1. Contract Time. Time is of the essence for all Work in this contract. The Contractor shall totally and finally complete the Work within **150** calendar days from Notice to Proceed date.
2. Liquidated Damages. Refer to "Special Conditions", Item 2.

### **ARTICLE 4. CONTRACT SUM**

For the performance of the Work and in accordance with the terms of the contract documents, the Owner will pay to the Contractor, subject to additions and deductions by Change Order, the Contract Sum of:

\$ \_\_\_\_\_

### **ARTICLE 5. PROGRESS PAYMENTS**

See "General Conditions", Section IV.3.a.

### **ARTICLE 6. FINAL PAYMENT**

The Owner shall cause to be paid, to the Contractor, a final payment constituting the entire unpaid balance of the Contract Sum, when the Work has been completed, the Contract and closeout procedures are fully performed, and the Project Manager has reviewed and approved the final application.

### **ARTICLE 7. MISCELLANEOUS PROVISIONS**

1. Terms. Terms used in this Agreement which are defined in the Conditions of the contract shall have the meaning designated therein.
2. Contract Bonds. The Contractor shall furnish a Performance Bond, and Statutory Payment Bond for 100 percent of the Contract Sum as security for the faithful performance and payment of all obligations under the contract documents.
3. Indemnity. In addition to the indemnity provisions of General Conditions Section V.1.g., the Contractor shall hold harmless, indemnify and defend the JPA, its board of directors, officers, employees, representatives and agents against any claim, action, loss, damage, injury, liability, cost and expense of whatsoever kind or nature, including but not limited to attorney's fees and court costs arising out of any injury, whether mental or corporeal, to persons, including death, or damage to property to the extent caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor, its employees, representatives, or any one acting on the Contractor's behalf in the performance of this contract, or any claim or damage or claim damage related to alleged breach of contract.
4. Access to Documents. The Owner shall be provided daily reports in possession of the Contractor. Owner shall also have access to any other documents related to the project, upon reasonable notice.
5. Subcontracting or Assigning of Contract. The Contractor agrees that it shall not



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subcontract, assign, delegate, or otherwise dispose of the contract, the duties to be performed under the contract, or the monies to become due under the contract without the Owner's prior written consent.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

OWNER

CONTRACTOR

JACKSONVILLE PORT AUTHORITY

BY: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

TITLE: \_\_\_\_\_

ATTEST:

ATTEST:

\_\_\_\_\_

\_\_\_\_\_

---

**ACKNOWLEDGEMENT AND ACCEPTANCE OF E-VERIFY  
COMPLIANCE**

**E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION**

In accordance with the Governor of Florida, Executive Order Number 11-02 (Verification of Employment Status), whereas, Federal law requires employers to employ only individuals eligible to work in the United States; and whereas, the Department of Homeland Security's E-Verify system allows employers to quickly verify in an efficient and cost effective manner;

The Contractor agrees to utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Contractor during the term of the contract. Contractors must include in all subcontracts the requirement that all subcontractors performing work or providing goods and services utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term. The Contractor further agrees to maintain records of its participation and compliance and its subcontractor's participation and compliance with the provisions of the E-Verify program, and to make such records available to JAXPORT upon request. Failure to comply with this requirement will be considered a material breach of the contract.

**By signing below, I acknowledge that I have reviewed, accept and will comply with the regulations pertaining to the E-Verify program.**

---

Company Name

Name of Official (Please Print)

---

Signature of Principal

Title:

Date

**CERTIFICATE OF CONTRACT COMPLETION  
AND CONTRACTOR'S AFFIDAVIT TO OWNER**

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CONTRACT: **C-1631A**

STATE OF ( )

COUNTY OF ( )

Before me, the undersigned authority,

Personally appeared \_\_\_\_\_, who being by me

First duly sworn, depose(s) and say(s):

1. He is (they are) \_\_\_\_\_, (a corporation)  
(a partnership) (an individual) doing business as  
\_\_\_\_\_, hereinafter called "Contractor".

2. Contractor heretofore entered into a contract with the Jacksonville Port Authority, hereinafter called "Owner", to furnish material, labor, and services for the construction of a certain building; or repairs or alterations as more specifically described in said contract, on the land and property of the Owner, located at \_\_\_\_\_, Duval County, Florida.

3. Contractor has fully completed construction in accordance with the terms of the contract and all creditors have been paid in full, except:

<u>Name of Creditor</u>	<u>Amount Due and Unpaid</u>
_____	\$ _____
_____	\$ _____

4. All Workers' Compensation claims have been settled and no liability claims are pending in connection with, arising out of or resulting from, the contract.

5. Receipt by the Contractor of the final payment, under the aforementioned contract, shall constitute a full release and discharge by the Contractor to the Owner of any and all claims of the Contractor against the Owner arising out of, connected with, or resulting from performance of the obligations of the Contractor pursuant to the contract documents.

6. The term "Creditor" as used in this Affidavit means subcontractors, laborers, material men, architects, engineers, landscape architects, surveyors, and all other persons, firms, corporations and activities supplying, performing, or otherwise providing anything of value used for or in connection with the contract.

7. This Affidavit is given pursuant to the provisions of the contract and applicable law, if any. Signed and Sealed in the presence of:

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

Sworn to and subscribed before me this \_\_\_\_\_ day \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public, State of \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

**CERTIFICATE OF  
SUBSTANTIAL  
COMPLETION**

Distribution to:

- OWNER
- ENGINEER
- CONTRACTOR
- FIELD
- OTHER

**PROJECT:**

**ENGINEER:**

**ARCHITECT'S PROJECT NO.:**

**TENANT:**

**PROJECT NO.:**  
**CONTRACT NO.:**

**TO (Owner):**

JACKSONVILLE PORT AUTHORITY  
POST OFFICE BOX 3005  
JACKSONVILLE, FL 32206-0005  
  
ATTN: ENGINEERING SERVICES

**CONTRACTOR:**

**CONTRACTOR FOR:**

**DATE OF ISSUANCE:**

**CONTRACT DATE:**

**PROJECT OR DESIGNATED PORTION SHALL INCLUDE:**

The Work performed under this Contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby established as \_\_\_\_\_, **20** which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

**DEFINITION OF DATE OF SUBSTANTIAL COMPLETION**

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Engineer when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

A list of items to be completed or corrected, prepared by the Contractor and verified and amended by the Engineer, is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The date of commencement of warranties for items on the attached list will be the date of final payment unless otherwise agreed to in writing. Attached Punch List prepared by \_\_\_\_\_ dated \_\_\_\_\_.

\_\_\_\_\_  
ENGINEER BY \_\_\_\_\_ DATE \_\_\_\_\_

The Contractor will complete or correct the Work on the list of items attached hereto within ( \_\_\_\_\_ **calendar**) days from the Date of Substantial Completion.

\_\_\_\_\_  
CONTRACTOR BY \_\_\_\_\_ DATE \_\_\_\_\_

The Tenant accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at \_\_\_\_\_ (time) \_\_\_\_\_ (date).

\_\_\_\_\_  
TENANT BY \_\_\_\_\_ DATE \_\_\_\_\_

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at \_\_\_\_\_ (time) \_\_\_\_\_ (date).

**Jacksonville Port Authority**  
\_\_\_\_\_  
OWNER BY \_\_\_\_\_ DATE \_\_\_\_\_

**CONSENT OF  
SURETY COMPANY  
TO FINAL PAYMENT**

OWNER   
ENGINEER   
CONTRACTOR   
FIELD   
OTHER

PROJECT:  
(name, address)

TO (Owner)

JACKSONVILLE PORT AUTHORITY  
POST OFFICE BOX 3005  
JACKSONVILLE, FL 32206-0005

ATTN: ENGINEERING SERVICES

CONTRACTOR:

PROJECT NO.

CONTRACT NO.:

ARCHITECT'S PROJECT NO.

CONTRACT FOR:

CONTRACT DATE:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the  
(here insert name and address of Surety Company)

SURETY COMPANY,

On bond of (here insert name and address of Contractor)

CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not  
relieve the Surety Company of any of its obligations to (here insert name and address of Owner)

OWNER,

as set for in the said Surety Company's bond.

IN WITNESS WHEREOF,

The Surety Company has hereunto set its hand this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
Surety Company

\_\_\_\_\_  
Signature of Authorized Representative

Attest:  
(Seal):

\_\_\_\_\_  
Title

# **OWNER'S MINIMUM PROJECT WORK RULES**

---

Project Name: **TMT WAREHOUSE #1 RE-ROOF**

Location: **TALLEYRAND MARINE TERMINAL**

Contract No(s): **C-1631A**

1. Normal project working hours are as follows:

8:00 A.M.	Starting Time
12:00 Noon - 1:00 P.M.	Lunch
5:00 P.M.	Shift Ends

Other working hours and shift work will be considered by the Owner upon submission by the Contractor.

2. No employee will enter Port Authority operating areas without a specific work assignment.
3. Personal vehicles will be parked in the area(s) specified for construction personnel.
4. No personal vehicles will be permitted inside the security gate controlled area without the written permission of the Terminal Director.
5. Contractor shall provide its employees with a designated eating, drinking area subject to approval of the Project Manager. Cleanliness will be maintained in all areas at all times. The parking lot is not an authorized eating area.
6. The following is a list of violations which are considered unsatisfactory conduct on JPA property and can result in the employee being denied access to the jobsite.
  - a. Refusal to submit to security inspection.
  - b. Smoking in prohibited areas.
  - c. Possession and/or use of intoxicants on JPA property.
  - d. Possession and/or use of narcotics or controlled substance on JPA property.
  - e. Possession of firearms on JPA property.
  - f. Contact with any new vehicles on JPA property.
7. Owner's facilities (such as, but not limited to, elevators, washrooms, vending machines, lunch rooms, etc.) are not to be used by Contractor's employees.

- 
8. Employees shall be provided with visible means of identification, showing Contractor's identification. Employees are required to wear this identification where plainly visible.
  9. The Contractor will be responsible for all its employees, suppliers, vendors, and all others on-site providing services to the Contractor.
  10. All vehicles, persons, packages, lunch pails, and tool boxes entering or leaving JPA property are subject to security inspection.
  11. All vehicles on-site for the Contractor's use must have company identification clearly visible at a minimum distance of 100 feet.

EMPLOYEE SIGNATURE: \_\_\_\_\_

EMPLOYEE NAME: \_\_\_\_\_

NAME OF CONTRACTOR: \_\_\_\_\_

DATE: \_\_\_\_\_

# **OWNER'S SAFETY GUIDELINES**

---

Project Name: **TMT WAREHOUSE #1 RE-ROOF**

Location: **TALLEYRAND MARINE TERMINAL**

Contract No(s): **C-1631A**

The safety items listed below is not intended as an exhaustive list of safety requirements but serves as a general guideline.

## **Safety Manual**

The contractor is responsible to provide JAXPORT with an electronic copy of their jobsite specific safety manual that provides safety guidance on day to day work activities to reduce potential safety incidents at the jobsite.

## **Regulatory Requirements**

The contractor and subcontractors will be responsible to:

- Comply with OSHA 29 CFR parts 1917 marine terminals, 1926 construction, 1910 general, 1926.59 hazardous communication standards "right-to-know".
- Post Material safety data sheets (MSDS) in work locations where contractor uses, or stores hazardous chemicals or substances as required by law.
- Contractor and subcontractor will comply with all environmental protection laws and regulations applicable to the jobsite, including those relating to the use of water, the release, discharge or disposal of wastes, the control of drainage, and the protection of vegetation, wildlife, habitats, or surroundings. Contractor and subcontractor shall also observe and comply with any environmental requirements made by JAXPORT in securing any permit or authorization for the jobsite.
- Communicate and wear OSHA required personal protective equipment when on the job site (i.e. reflective vests with Company's identification, gloves, hard hats, safety glasses, steel toe shoes, etc.).
- If applicable ensure that platforms and scaffolding conform to OSHA specifications and have decking, toe boards, mid and top rail, cross bracing, level pads and/or wheels and appropriate ladders for platform access. Ensure the use of continuous fall protection equipment (scaffolds and/or harnesses) when activities take place more than 6'-0" above a lower level or at such lower elevations as may be established for the work site.
- If it becomes necessary to have access to any openings or shafts or to remove handrails, contractor and or subcontractor shall ensure that the openings or shafts are protected in accordance with generally accepted practices and any applicable federal, state or local safety standards while the work is in progress, and that any covers or handrails previously removed by the contractor and or subcontractor are replaced before leaving the area.



# **OWNER'S SAFETY GUIDELINES**

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## **Jobsite Requirement**

- Contractor will provide safety barriers to clearly identify the working area to prevent others from accessing the work area. The safety zone shall be sufficiently sized to prevent damage to others or existing facilities and structures. Upon completion of the work, Contractor shall remove the safety barriers from the work area.
- Maintain clean work areas and secure and protect all work materials in accordance with safety requirements of generally recognized industry standards.
- Additional safety rules and/or measures may become necessary at any time due to near misses, change in jobsite location, etc.
- Familiarize and abide by JAXPORT safety rules for the jobsite.
- Communicate frequency of safety meeting with its employees and list the topics discussed with signatures of attendees. Such list shall be made available to JAXPORT upon request.
- Perform self-audits (safety assessments) at least monthly and document and provide findings to JAXPORT project management and Risk and Compliance manager upon request.

## **Incident/Emergency Response Plan**

- As soon as possible, but no longer than 2 hrs. after the time of incident, advise JAXPORT of any incident resulting in injury or damage to any property. A written report of the incident will be submitted to the supervising JAXPORT Project Manager and JAXPORT's Manager of Risk and Compliance (904) 357-3083 within 24 hours. Daily updates will be provided to JAXPORT until an investigation is completed.
- Provide JAXPORT on-site management with an "emergency list" showing contractor's preferred company doctor, hospital, workers' compensation insurance company, and any other health care providers, such list to be updated within 24 hours of any change in the information provided. Contractor shall furnish its employees with first aid or refer employees with first aid injuries to its company doctor.

## **Audit and Training**

- Contractor is responsibility to train, manage, supervise, monitor, and inspect contractors and subcontracted jobsite work activities enforcing compliance with all applicable federal, state, local laws and JAXPORT safety rules and requirements.
- Documentation of required training must be readily available and in compliance with OSHA requirements.
- JAXPORT personnel may audit contractors and subcontractor's safety processes/programs at the jobsite at any time and empowered to take necessary corrective action up to and including work stoppage for serious safety hazards.

## **OWNER'S SAFETY GUIDELINES**

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EMPLOYEE SIGNATURE: \_\_\_\_\_

EMPLOYEE NAME: \_\_\_\_\_

NAME OF CONTRACTOR: \_\_\_\_\_

DATE: \_\_\_\_\_

**PERFORMANCE BOND**

**BOND NO.:** \_\_\_\_\_

**As to the Contractor/Principal:**

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

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

Telephone: \_\_\_\_\_

**As to the Surety:**

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

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

Telephone: \_\_\_\_\_

**As to the Owner of the Property/Contracting Public Entity:**

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

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

Telephone: \_\_\_\_\_

Description of project including address and description of improvements:

\_\_\_\_\_

Contractor and Surety are each held and firmly bound unto the Jacksonville Port Authority, a body politic and corporate in Duval County, Florida, as Obligee (hereinafter called "JAXPORT"), in the amount of \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_), lawful money of the United States of America, for the payment whereof Contractor and Surety bind themselves, their respective heirs, executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these

presents.

**WHEREAS,** Contractor has by written agreement dated the \_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_, entered into a contract with the JAXPORT for \_\_\_\_\_

all of said work to be done in strict accordance with any advertisement for bids for said work and done in strict compliance with the drawings and specifications for said work and requirements of the JAXPORT proposal and award therefore and of the contract and all documents included as a part of the contract (hereinafter referred to collectively as the "Contract"), all of which are by reference made a part hereof to the same extent as if fully set out herein.

**NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION**

is such that, if Contractor shall: (1) Promptly and faithfully perform said Contract; and (2) perform the guarantee of all work and materials furnished under the Contract for the time specified in the Contract; and (3) pay the JAXPORT all losses (including delay and disruption damages), expenses and costs, that the JAXPORT sustains because of a default by Contractor under the Contract; then this obligation shall be null and void; otherwise it shall remain in full force and effect.

**PROVIDED** that, the Surety hereby waives notice of any alteration or extension of time made by the JAXPORT, and any changes in or under the Contract and compliance or noncompliance with any formalities connected with the Contract or the changes shall not affect Surety's obligation under this bond.

**PROVIDED** further that, whenever Contractor shall be, and declared by the JAXPORT to be in default under the Contract, the JAXPORT having performed the JAXPORT's obligations hereunder, the Surety shall, at the JAXPORT's sole option, either:

(1) Within fourteen (14) days of notice of elected option by the JAXPORT, remedy the default and pay the JAXPORT all losses, actual damages (including delay and disruption damages), expenses, costs, and statutory attorney's fees, including appellate proceedings, pursuant to Section 627.756, Florida Statutes, that the JAXPORT sustains because of a default by Contractor under the Contract and will save the JAXPORT harmless on account of all claims and damages to persons, property or premises arising from delay in meeting either milestone dates or the Contract completion date; or

(2) Award a bid contract with a completion contractor and issue notice to proceed within twenty-one (21) days of notice by the JAXPORT to the Surety of the default of Contractor and demand by the JAXPORT for Surety to complete the Contract. Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible qualified bidder, or, if the JAXPORT elects, upon determination by the JAXPORT and the Surety jointly of the lowest

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bidder and the JAXPORT, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the responsible qualified bidder, arrange for a contract between such balance of the contract price, including other losses, actual damages (including delay and disruption damages), expenses, costs and statutory attorney's fees, including appellate proceedings, pursuant to Section 627.756, Florida Statutes, for which the Surety may be liable hereunder. The term "balance of the contract price" as used in this paragraph, shall mean the total amount payable by the JAXPORT to Contractor under the Contract and any amendments thereto, less the amount properly paid by the JAXPORT to Contractor; or

(3) Within fourteen (14) days of notice of elected option by the JAXPORT, tender to the JAXPORT the full amount necessary in order for the JAXPORT to completely perform and carry out completion of the Contract in accordance with its terms and conditions and in order to save the JAXPORT harmless on account of all claims and damages to persons or property, and pay the JAXPORT for all losses, actual damages (including delay and disruption damages), including those arising from delay in meeting either milestone dates or the Contract completion date, expenses, costs and statutory attorney's fees, including appellate proceedings, pursuant to Section 627.756, Florida Statutes.

**PROVIDED** further that, the Surety shall save the JAXPORT harmless from any and all damages, including expenses, costs, contractual damages, injury, negligence or default, patent infringement and actual damages (including delay and disruption damages) and assessments which may arise by virtue of any defects in work or materials within a period of one (1) year from the date on which the JAXPORT makes final payment under the Contract.

**PROVIDED** further that, during any interim period after the JAXPORT has declared Contractor to be in default but Surety has not yet remedied the default in the manner chosen by the JAXPORT, Surety shall be responsible for securing and protecting the work site including, but not limited to, the physical premises, structures, fixtures, materials, and equipment, and shall be responsible for securing and protecting materials and equipment stored off-site.

**PROVIDED** further that, no right of action shall accrue on this bond to or for the use of any person or corporation other than the JAXPORT named herein or the heirs, executors, administrators or successors of the JAXPORT.

**IN WITNESS WHEREOF**, the said Principal and the said Surety have duly executed this bond the \_\_\_\_ day of \_\_\_\_\_, 2021.

**ATTEST:**

**ATTEST:**

By: \_\_\_\_\_ By: \_\_\_\_\_  
Its Its  
**AS PRINCIPAL**

**SIGNED, SEALED AND DELIVERED  
IN THE PRESENCE OF:**

**ATTEST:**

**ATTEST:**

By: \_\_\_\_\_ By: \_\_\_\_\_  
Its Its  
**AS SURETY**

**NAME OF AGENT:** \_\_\_\_\_

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

**TELEPHONE NO:** (\_\_\_\_) \_\_\_\_\_ **FACSIMILE NO:** (\_\_\_\_) \_\_\_\_\_

**Countersigned:**

By: \_\_\_\_\_ **Bond I.D. No:** \_\_\_\_\_  
State of Florida

**Name of Firm:** \_\_\_\_\_

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

**NOTE: DATE OF BOND MUST NOT BE PRIOR TO DATE OF CONTRACT.**

**CONTRACT NUMBER \_\_\_\_\_**  
**PAYMENT BOND**  
**CONTRACT BOND REQUIRED**  
**BY SECTION 255.05, FLORIDA STATUTES**

Bond No. \_\_\_\_\_

---

**As to the Contractor/Principal:**

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

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

Telephone: \_\_\_\_\_

**As to the Surety:**

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

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

Telephone: \_\_\_\_\_

**As to the Owner of the Property/Contracting Public Entity:**

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

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

Telephone: \_\_\_\_\_

**Description of project including address and description of improvements:**

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

Contractor and Surety are each held and firmly bound unto the Jacksonville Port Authority, as a group, and each member individually, as Obligee (hereinafter called Owner), in the amount of \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_), lawful money of the United States of America, for the payment whereof Contractor and surety bind themselves, their respective heirs, executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, Contractor and Owner have by written agreement dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, entered into a contract for **C-1631A TMT Warehouse #1 Re-Roof, Talleyrand Marine Terminal** all of said work required to be done in strict compliance with the drawings, plans and specifications prepared by the Jacksonville Port Authority Engineering and Construction Department for said work and in strict compliance with the requirements of the contract and all documents included as a part of the contract (hereinafter referred to collectively as the Contract), all of which are by reference made a part hereof to the same extent as if fully set out herein.

Promptly makes payments to all lienors or claimants supplying labor, materials and supplies used directly or indirectly by Contractor in the prosecution of the work provided for in the Contract, including any authorized extensions or modifications thereof, then this bond is void; otherwise, it remains in full force and effect.

**PROVIDED**, that the Surety hereby waives notice of any alteration or extension of time made by the Owner, and any changes in or under the Contract and compliance or noncompliance with any formalities connected with the Contract or with the changes do not affect Surety's obligation under this bond.

**PROVIDED**, further, that no action shall be instituted or prosecuted against the Contractor or the Surety on the bond after one (1) year from the performance of the labor or completion of delivery of the materials or supplies, or the date the rental equipment was last on the jobsite available for use.



**IN WITNESS WHEREOF, the said Principal and the said Surety have duly executed this bond the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.**

**ATTEST:**

**ATTEST:**

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

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

**Its**

**Its PRINCIPAL**

**SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF:**

**ATTEST:**

**ATTEST:**

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

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

**Its**

**Its SURETY**

**NAME OF AGENT:** \_\_\_\_\_

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

**TELEPHONE NO. (\_\_\_\_)\_\_\_\_\_**

**FACSIMILE NO: (\_\_\_\_)\_\_\_\_\_**

**Countersigned:**

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

**Bond I.D. No:** \_\_\_\_\_

**State of Florida**

**Name of Firm:** \_\_\_\_\_

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

**NOTE: DATE OF BOND MUST NOT BE PRIOR TO DATE OF CONTRACT.**



## **TECHNICAL SPECIFICATIONS**

**FOR**

## **TMT WAREHOUSE #1 RE-ROOF**

**Project No.: T2018-01**

**Contract No.: C-1631A**

**Talleyrand Marine Terminal**

# Talleyrand Marine Terminal Warehouse #1 Re-Roof

**JAXPORT**  
Jacksonville, Florida

## Project Manual - Volume 2

**BIDDING REQUIREMENTS AND CONTRACT FORMS**

**Prepared for:**



**Prepared by:**

# Jacobs

3150 SW 38th Ave., Suite 700  
Miami, FL 33146  
305.718.0599

September 2021

**SECTION 000010 – TABLE OF CONTENTS****VOLUME 1 - BIDDING REQUIREMENTS AND CONTRACT FORMS**

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## SECTION 011000 - SUMMARY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

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

- B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

#### 1.3 PROJECT INFORMATION

- A. Project Identification: Talleyrand Marine Terminal Warehouse #1 Re-Roof

- B. Project Location: 2064 E. 11th St, Jacksonville, FL 32206

- C. Owner: JAXPORT

1. Owner's Representative: -TBD

- D. Architect: Jacobs Engineering Group, Inc., 3150 S.W. 38th Avenue, Suite 700, Miami, FL 33146. Kevin Regalado, AIA, 305.392.2453, kevin.regalado@jacobs.com

#### 1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
  - 1. Re-Roof replacement.
- B. Type of Contract:
  - 1. Project will be constructed under a single prime contract.

#### 1.5 PHASED CONSTRUCTION

- A. The Work shall be conducted in phases, with each phase substantially complete as indicated on the contract documents.
- B. Before commencing Work of each phase, submit an updated copy of Contractor's construction schedule showing the sequence, commencement and completion dates for all phases of the Work.

#### 1.6 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

#### 1.7 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
  - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used

- facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.
- B. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
  2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
- C. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
  2. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
  3. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.
- 1.8 WORK RESTRICTIONS
- A. Work Restrictions, General: Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify Owner not less than two days in advance of proposed utility interruptions.
  2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.



1. Notify Owner not less than two days in advance of proposed disruptive operations.
  2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.
- F. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
- G. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
1. Maintain list of approved screened personnel with Owner.

## 1.9 SPECIFICATION AND DRAWING CONVENTIONS

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

## SECTION 012100 - ALLOWANCES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
  - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
  - 1. Contingency allowances.
  - 2. Testing and inspecting allowances.
  - 3. Permitting allowances.
- C. Related Requirements:
  - 1. Section 014000 "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.

#### 1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

#### 1.4 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

## 1.6 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

## 1.7 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
- C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.
- D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

## 1.8 TESTING AND INSPECTING ALLOWANCES

- A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.
- B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.
- C. Costs of services not required by the Contract Documents are not included in the allowance.
- D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

## 1.9 PERMITTING ALLOWANCES

- A. Permitting allowances include the cost of the permits as required by the authority having jurisdiction and their associated departments.
- B. The allowance does not include incidental labor required to process / expedite the plans through the required authority having jurisdictions. The cost for incidental labor to process / expedite the plans shall be included in the Contract Sum.
- C. At Project closeout, credit unused amounts remaining in the permitting allowance to Owner by Change Order.

## 1.10 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
  - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
  - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
  - 3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
  - 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
  - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
  - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

### 3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

### 3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Motorized Exhaust Ventilators Allowance: Include the sum of \$24,000.00 for repair, replacement and testing of motors, parts and hoods.

END OF SECTION 012100

## SECTION 012500 - SUBSTITUTION PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
  - 1. Section 012100 "Allowances" for products selected under an allowance.
  - 2. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

#### 1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

#### 1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use CSI Form 13.1A.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

- c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
  - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. Certificates and qualification data, where applicable or requested.
  - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
  - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - i. Research reports evidencing compliance with building code in effect for Project.
  - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
  - k. Cost information, including a proposal of change, if any, in the Contract Sum.
  - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
  - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
  - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

## 1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

## 1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

## PART 2 - PRODUCTS

### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Substitution request is fully documented and properly submitted.
    - c. Requested substitution will not adversely affect Contractor's construction schedule.
    - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - e. Requested substitution is compatible with other portions of the Work.
    - f. Requested substitution has been coordinated with other portions of the Work.
    - g. Requested substitution provides specified warranty.
    - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Not allowed.

## PART 3 - EXECUTION (Not Used)

END OF SECTION 012500



## SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
  - 1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

#### 1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

#### 1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within time specified in Proposal Request or 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and

finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

- e. Quotation Form: Use forms acceptable to Architect.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  4. Include costs of labor and supervision directly attributable to the change.
  5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
  6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
  7. Proposal Request Form: Use form acceptable to Architect.

#### 1.5 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

#### 1.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

#### 1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

## SECTION 012900 - PAYMENT PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
  - 1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
  - 2. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
  - 3. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

#### 1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

#### 1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
  - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with continuation sheets.
    - b. Submittal schedule.
    - c. Items required to be indicated as separate activities in Contractor's construction schedule.
  - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.
  4. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.
  5. Subschedules for Separate Design Contracts: Where the Owner has retained design professionals under separate contracts who will each provide certification of payment requests, provide subschedules showing values coordinated with the scope of each design services contract as described in Section 011000 "Summary."
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Architect's project number.
    - d. Contractor's name and address.
    - e. Date of submittal.
  2. Arrange schedule of values consistent with format of AIA Document G703.
  3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
    - a. Related Specification Section or Division.
    - b. Description of the Work.
    - c. Name of subcontractor.
    - d. Name of manufacturer or fabricator.
    - e. Name of supplier.
    - f. Change Orders (numbers) that affect value.
    - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
      - 1) Labor.
      - 2) Materials.
      - 3) Equipment.
  4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
    - a. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
  5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  - a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
9. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.
10. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
11. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

## 1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
  1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: Submit Application for Payment to Architect by the 15th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
  1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.
- C. Application for Payment Forms: Use forms acceptable to Architect and Owner for Applications for Payment. Submit forms for approval with initial submittal of schedule of values.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
  2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
  3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
  4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
  2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
  3. Provide summary documentation for stored materials indicating the following:
    - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit conditional final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
  5. Waiver Forms: Submit executed waivers of lien on forms, acceptable to Owner.

- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
  2. Schedule of values.
  3. Sustainable design submittal for project materials cost data.
  4. Contractor's construction schedule (preliminary if not final).
  5. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
  6. Products list (preliminary if not final).
  7. Sustainable design action plans.
  8. Schedule of unit prices.
  9. Submittal schedule (preliminary if not final).
  10. List of Contractor's staff assignments.
  11. List of Contractor's principal consultants.
  12. Copies of building permits.
  13. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  14. Initial progress report.
  15. Report of preconstruction conference.
  16. Certificates of insurance and insurance policies.
  17. Performance and payment bonds.
  18. Data needed to acquire Owner's insurance.
- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
  2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  3. Updated final statement, accounting for final changes to the Contract Sum.
  4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
  5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
  6. AIA Document G707, "Consent of Surety to Final Payment."
  7. Evidence that claims have been settled.
  8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
  9. Final liquidated damages settlement statement.



PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

## SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General coordination procedures.
  - 2. Coordination drawings.
  - 3. Requests for Information (RFIs).
  - 4. Project Web site.
  - 5. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
  - 1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
  - 2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

#### 1.3 DEFINITIONS

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

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.

- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
1. Post copies of list in project meeting room, in temporary field office and by each temporary telephone. Keep list current at all times.

## 1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
  2. Preparation of the schedule of values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Preinstallation conferences.
  7. Project closeout activities.
  8. Startup and adjustment of systems.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

## 1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
  - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
  - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
  - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
  - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
  - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
  - f. Indicate required installation sequences.
  - g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

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

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.

5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
  6. Mechanical and Plumbing Work: Show the following:
    - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
    - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
    - c. Fire-rated enclosures around ductwork.
  7. Electrical Work: Show the following:
    - a. Runs of vertical and horizontal conduit 1-1/4 inches in diameter and larger.
    - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
    - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
    - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
  8. Fire-Protection System: Show the following:
    - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
  9. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make changes as directed and resubmit.
  10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 013300 "Submittal Procedures."
- C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
  2. File Preparation Format: DWG, Version AutoCad 2018 operating in Microsoft Windows operating system.
  3. File Submittal Format: Submit or post coordination drawing files using format same as file preparation format.
  4. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
    - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
    - b. Digital Data Software Program: Drawings are available in DWG, Version AutoCad 2018 operating in Microsoft Windows operating system.

- c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.

## 1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
  1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
  1. Project name.
  2. Project number.
  3. Date.
  4. Name of Contractor.
  5. Name of Architect.
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  12. Contractor's signature.
  13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.
  1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
  1. The following Contractor-generated RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for approval of Contractor's means and methods.

- d. Requests for coordination information already indicated in the Contract Documents.
  - e. Requests for adjustments in the Contract Time or the Contract Sum.
  - f. Requests for interpretation of Architect's actions on submittals.
  - g. Incomplete RFIs or inaccurately prepared RFIs.
2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
  3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Software log with not less than the following:
1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Architect.
  4. RFI number including RFIs that were returned without action or withdrawn.
  5. RFI description.
  6. Date the RFI was submitted.
  7. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.
- 1.8 PROJECT MEETINGS
- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
1. Conduct the conference to review responsibilities and personnel assignments.
  2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Lines of communications.
    - f. Procedures for processing field decisions and Change Orders.
    - g. Procedures for RFIs.
    - h. Procedures for testing and inspecting.
    - i. Procedures for processing Applications for Payment.
    - j. Distribution of the Contract Documents.
    - k. Submittal procedures.
    - l. Sustainable design requirements.
    - m. Preparation of record documents.
    - n. Use of the premises and existing building.
    - o. Work restrictions.
    - p. Working hours.
    - q. Owner's occupancy requirements.
    - r. Responsibility for temporary facilities and controls.
    - s. Procedures for moisture and mold control.
    - t. Procedures for disruptions and shutdowns.
    - u. Construction waste management and recycling.
    - v. Parking availability.
    - w. Office, work, and storage areas.
    - x. Equipment deliveries and priorities.
    - y. First aid.
    - z. Security.
    - aa. Progress cleaning.
  4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
  2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:



- a. Contract Documents.
  - b. Options.
  - c. Related RFIs.
  - d. Related Change Orders.
  - e. Purchases.
  - f. Deliveries.
  - g. Submittals.
  - h. Sustainable design requirements.
  - i. Review of mockups.
  - j. Possible conflicts.
  - k. Compatibility requirements.
  - l. Time schedules.
  - m. Weather limitations.
  - n. Manufacturer's written instructions.
  - o. Warranty requirements.
  - p. Compatibility of materials.
  - q. Acceptability of substrates.
  - r. Temporary facilities and controls.
  - s. Space and access limitations.
  - t. Regulations of authorities having jurisdiction.
  - u. Testing and inspecting requirements.
  - v. Installation procedures.
  - w. Coordination with other work.
  - x. Required performance results.
  - y. Protection of adjacent work.
  - z. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
  5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
  2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
    - a. Preparation of record documents.
    - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.

- c. Submittal of written warranties.
  - d. Requirements for completing sustainable design documentation.
  - e. Requirements for preparing operations and maintenance data.
  - f. Requirements for delivery of material samples, attic stock, and spare parts.
  - g. Requirements for demonstration and training.
  - h. Preparation of Contractor's punch list.
  - i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
  - j. Submittal procedures.
  - k. Coordination of separate contracts.
  - l. Owner's partial occupancy requirements.
  - m. Installation of Owner's furniture, fixtures, and equipment.
  - n. Responsibility for removing temporary facilities and controls.
4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at biweekly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
  2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      - 1) Review schedule for next period.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Resolution of BIM component conflicts.
      - 4) Status of submittals.
      - 5) Status of sustainable design documentation.
      - 6) Deliveries.
      - 7) Off-site fabrication.
      - 8) Access.
      - 9) Site utilization.
      - 10) Temporary facilities and controls.
      - 11) Progress cleaning.
      - 12) Quality and work standards.

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

- 10) Work hours.
  - 11) Hazards and risks.
  - 12) Progress cleaning.
  - 13) Quality and work standards.
  - 14) Change Orders.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

## SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Startup construction schedule.
  - 2. Contractor's construction schedule.
  - 3. Construction schedule updating reports.
  - 4. Daily construction reports.
  - 5. Material location reports.
  - 6. Site condition reports.
  - 7. Special reports.
- B. Related Requirements:
  - 1. Section 013300 "Submittal Procedures" for submitting schedules and reports.
  - 2. Section 014000 "Quality Requirements" for submitting a schedule of tests and inspections.

#### 1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Architect.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
  - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
  - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
  - 1. Working electronic copy of schedule file, where indicated.
  - 2. PDF electronic file.
- B. Startup construction schedule.
  - 1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.
- D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
  - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
  - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
  - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
  - 3. Total Float Report: List of all activities sorted in ascending order of total float.

4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
- F. Construction Schedule Updating Reports: Submit with Applications for Payment.
- G. Daily Construction Reports: Submit at weekly intervals.
- H. Material Location Reports: Submit at weekly intervals.
- I. Site Condition Reports: Submit at time of discovery of differing conditions.
- J. Special Reports: Submit at time of unusual event.
- K. Qualification Data: For scheduling consultant.

#### 1.5 QUALITY ASSURANCE

- A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request.
- B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
  1. Review software limitations and content and format for reports.
  2. Verify availability of qualified personnel needed to develop and update schedule.
  3. Discuss constraints, including phasing and partial Owner occupancy.
  4. Review delivery dates for Owner-furnished products.
  5. Review schedule for work of Owner's separate contracts.
  6. Review submittal requirements and procedures.
  7. Review time required for review of submittals and resubmittals.
  8. Review requirements for tests and inspections by independent testing and inspecting agencies.
  9. Review time required for Project closeout and Owner startup procedures.
  10. Review and finalize list of construction activities to be included in schedule.
  11. Review procedures for updating schedule.

#### 1.6 COORDINATION

- A. Coordinate Contractor's construction schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.
  1. Secure time commitments for performing critical elements of the Work from entities involved.
  2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

## PART 2 - PRODUCTS

### 2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
  2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
  4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
  5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
  6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
  2. Work under More Than One Contract: Include a separate activity for each contract.
  3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
  4. Work Restrictions: Show the effect of the following items on the schedule:
    - a. Coordination with existing construction.
    - b. Limitations of continued occupancies.
    - c. Uninterruptible services.
    - d. Partial occupancy before Substantial Completion.
    - e. Use of premises restrictions.
    - f. Provisions for future construction.
    - g. Seasonal variations.
    - h. Environmental control.
  5. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:



- a. Subcontract awards.
  - b. Submittals.
  - c. Purchases.
  - d. Mockups.
  - e. Fabrication.
  - f. Sample testing.
  - g. Deliveries.
  - h. Installation.
  - i. Tests and inspections.
  - j. Adjusting.
  - k. Curing.
  - l. Building flush-out.
  - m. Startup and placement into final use and operation.
6. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
- a. Structural completion.
  - b. Temporary enclosure and space conditioning.
  - c. Permanent space enclosure.
  - d. Completion of mechanical installation.
  - e. Completion of electrical installation.
  - f. Substantial Completion.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.
1. See Section 012900 "Payment Procedures" for cost reporting and payment procedures.
- F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
1. Unresolved issues.
  2. Unanswered Requests for Information.
  3. Rejected or unreturned submittals.
  4. Notations on returned submittals.
  5. Pending modifications affecting the Work and Contract Time.
- G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.
- H. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

1. Use Microsoft Project for Windows operating system.

## 2.2 STARTUP CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit startup, horizontal, bar-chart-type construction schedule within seven days of date established for the Notice to Proceed.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

## 2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within 30 days of date established for the Notice to Proceed. Base schedule on the startup construction schedule and additional information received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
  1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

## 2.4 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
  1. List of subcontractors at Project site.
  2. List of separate contractors at Project site.
  3. Approximate count of personnel at Project site.
  4. Equipment at Project site.
  5. Material deliveries.
  6. High and low temperatures and general weather conditions, including presence of rain or snow.
  7. Accidents.
  8. Meetings and significant decisions.
  9. Unusual events (see special reports).
  10. Stoppages, delays, shortages, and losses.
  11. Meter readings and similar recordings.
  12. Emergency procedures.
  13. Orders and requests of authorities having jurisdiction.
  14. Change Orders received and implemented.
  15. Construction Change Directives received and implemented.
  16. Services connected and disconnected.
  17. Equipment or system tests and startups.

18. Partial completions and occupancies.
  19. Substantial Completions authorized.
- B. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:
1. Material stored prior to previous report and remaining in storage.
  2. Material stored prior to previous report and since removed from storage and installed.
  3. Material stored following previous report and remaining in storage.
- C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

## 2.5 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.
1. In-House Option: Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
  2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.
- B. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate final completion percentage for each activity.
- C. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

## SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
  - 3. Final completion construction photographs.
- B. Related Requirements:
  - 1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
  - 2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
  - 3. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
  - 4. Section 024119 "Selective Structure Demolition" for photographic documentation before selective demolition operations commence.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
  - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
  - 2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
  - 3. Identification: Provide the following information with each image description in file metadata tag:
    - a. Name of Project.
    - b. Name and contact information for photographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date photograph was taken.

- f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
  - g. Unique sequential identifier keyed to accompanying key plan.
- C. Construction Photographs: Submit two prints of each photographic view within seven days of taking photographs.

#### 1.4 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.
- B. Web-Based Photographic Documentation Service Provider: A firm specializing in providing photographic equipment, Web-based software, and related services for construction projects, with record of providing satisfactory services similar to those required for Project.

#### 1.5 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

### PART 2 - PRODUCTS

#### 2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

### PART 3 - EXECUTION

#### 3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in file name for each image.

2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- D. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
1. Flag construction limits before taking construction photographs.
  2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
  3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
  4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- E. Periodic Construction Photographs: Take 20 photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Architect-Directed Construction Photographs: From time to time, Architect will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
- G. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as project record documents. Architect will inform photographer of desired vantage points.
1. Do not include date stamp.
- H. Additional Photographs: Architect may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.
1. Three days' notice will be given, where feasible.
  2. In emergency situations, take additional photographs within 24 hours of request.
  3. Circumstances that could require additional photographs include, but are not limited to, the following:
    - a. Special events planned at Project site.
    - b. Immediate follow-up when on-site events result in construction damage or losses.
    - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
    - d. Substantial Completion of a major phase or component of the Work.
    - e. Extra record photographs at time of final acceptance.
    - f. Owner's request for special publicity photographs.

END OF SECTION 013233

## SECTION 013300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
  - 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
  - 2. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
  - 3. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
  - 4. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
  - 5. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

#### 1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.



#### 1.4 ACTION SUBMITTALS

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

#### 1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will **[ not ]** be provided by Architect for Contractor's use in preparing submittals.
1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.
    - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    - b. Digital Drawing Software Program: The Contract Drawings are available in Autocad 2018.
    - c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.
    - d. The following digital data files will by furnished for each appropriate discipline:
      - 1) Floor plans.

- 2) Reflected ceiling plans.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 15 days for review of each resubmittal.
  4. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
    - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
  3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.

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

- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

## PART 2 - PRODUCTS

### 2.1 SUBMITTAL PROCEDURES

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

5. Submit Product Data before or concurrent with Samples.
  6. Submit Product Data in the following format:
    - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
  3. Submit Shop Drawings in the following format:
    - a. PDF electronic file.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of applicable Specification Section.
    - e. Specification paragraph number and generic name of each item.
  3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
  4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
  - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
  - a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.
    - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
    - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
  1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
  2. Manufacturer and product name, and model number if applicable.
  3. Number and name of room or space.
  4. Location within room or space.
  5. Submit product schedule in the following format:
    - a. PDF electronic file.
- F. Coordination Drawing Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
- G. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
- H. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."

- J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- K. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."
- L. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- M. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- N. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- O. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- R. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- S. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - 1. Name of evaluation organization.
  - 2. Date of evaluation.
  - 3. Time period when report is in effect.
  - 4. Product and manufacturers' names.
  - 5. Description of product.
  - 6. Test procedures and results.
  - 7. Limitations of use.

- U. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- V. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- W. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- X. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

## 2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."



- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

### 3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 013300

## SECTION 013516 - ALTERATION PROJECT PROCEDURES

### 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 special procedures for alteration work.

#### 1.3 DEFINITIONS

- A. Alteration Work: This term includes remodeling, renovation, repair, and maintenance work performed within existing spaces or on existing surfaces as part of the Project.
- B. Consolidate: To strengthen loose or deteriorated materials in place.
- C. Design Reference Sample: A sample that represents the Architect's prebid selection of work to be matched; it may be existing work or work specially produced for the Project.
- D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.
- F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.
- G. Repair: To correct damage and defects, retaining existing materials, features, and finishes. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.
- H. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.
- I. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.
- J. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.
- K. Retain: To keep existing items that are not to be removed or dismantled.

- L. Strip: To remove existing finish down to base material unless otherwise indicated.

#### 1.4 COORDINATION

- A. Alteration Work Subschedule: A construction schedule coordinating the sequencing and scheduling of alteration work for entire Project, including each activity to be performed, and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for alteration work.
  - 1. Schedule construction operations in sequence required to obtain best Work results.
  - 2. Coordinate sequence of alteration work activities to accommodate the following:
    - a. Owner's continuing occupancy of portions of existing building.
    - b. Owner's partial occupancy of completed Work.
    - c. Other known work in progress.
    - d. Tests and inspections.
  - 3. Detail sequence of alteration work, with start and end dates.
  - 4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
  - 5. Use of elevator and stairs.
  - 6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use in existing structure. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.
- B. Pedestrian and Vehicular Circulation: Coordinate alteration work with circulation patterns within Project building(s) and site. Some work is near circulation patterns and adjacent to restricted areas. Circulation patterns cannot be closed off entirely and in places can be only temporarily redirected around small areas of work. Access to restricted areas may not be obstructed. Plan and execute the Work accordingly.

#### 1.5 PROJECT MEETINGS FOR ALTERATION WORK

- A. Preliminary Conference for Alteration Work: Before starting alteration work, conduct conference at Project site.
  - 1. Attendees: In addition to representatives of Owner, Architect, and Contractor, testing service representative, specialists, and chemical-cleaner manufacturer(s) shall be represented at the meeting.
  - 2. Agenda: Discuss items of significance that could affect progress of alteration work, including review of the following:
    - a. Alteration Work Subschedule: Discuss and finalize; verify availability of materials, specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
    - b. Fire-prevention plan.
    - c. Governing regulations.
    - d. Areas where existing construction is to remain and the required protection.

- e. Hauling routes.
  - f. Sequence of alteration work operations.
  - g. Storage, protection, and accounting for salvaged and specially fabricated items.
  - h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
  - i. Qualifications of personnel assigned to alteration work and assigned duties.
  - j. Requirements for extent and quality of work, tolerances, and required clearances.
  - k. Embedded work such as flashings and lintels, special details, collection of waste, protection of occupants and the public, and condition of other construction that affects the Work or will affect the work.
3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.
- B. Coordination Meetings: Conduct coordination meetings specifically for alteration work at weekly intervals. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner, Architect, and Contractor, each specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of alteration work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to alteration work.
  2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of alteration work. Include topics for discussion as appropriate to status of Project.
    - a. Alteration Work Subschedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
    - b. Schedule Updating: Revise Contractor's Alteration Work Subschedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    - c. Review present and future needs of each entity present, including review items listed in the "Preliminary Conference for Alteration Work" Paragraph in this article and the following:
      - 1) Interface requirements of alteration work with other Project Work.
      - 2) Status of submittals for alteration work.
      - 3) Access to alteration work locations.
      - 4) Effectiveness of fire-prevention plan.
      - 5) Quality and work standards of alteration work.
      - 6) Change Orders for alteration work.
  3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

## 1.6 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.
  - 1. Carefully dismantle and salvage each item or object in a manner to prevent damage and protect it from damage, then promptly deliver it to Owner where directed at Project site.

## 1.7 INFORMATIONAL SUBMITTALS

- A. Alteration Work Subschedule:
  - 1. Submit alteration work subschedule within seven days of date established for commencement of alteration work.
- B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements that are to remain, including finish surfaces, that might be misconstrued as damage caused by Contractor's alteration work operations.
- C. Alteration Work Program: Submit 30 days before work begins.
- D. Fire-Prevention Plan: Submit 30 days before work begins.

## 1.8 QUALITY ASSURANCE

- A. Specialist Qualifications: An experienced firm regularly engaged in specialty work similar in nature, materials, design, and extent to alteration work as specified in each Section and that has completed a minimum of five recent projects with a record of successful in-service performance that demonstrates the firm's qualifications to perform this work.
  - 1. Field Supervisor Qualifications: Full-time supervisors experienced in specialty work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on-site when specialty work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.
    - a. Construct new mockups of required work whenever a supervisor is replaced.
- B. Alteration Work Program: Prepare a written plan for alteration work for whole Project, including each phase or process and protection of surrounding materials during operations. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project alteration work program with specific requirements of programs required in other alteration work Sections.
  - 1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.

2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.
- C. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.
- D. Safety and Health Standard: Comply with ANSI/ASSE A10.6.

## 1.9 STORAGE AND HANDLING OF SALVAGED MATERIALS

### A. Salvaged Materials:

1. Clean loose dirt and debris from salvaged items unless more extensive cleaning is indicated.
2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

### B. Salvaged Materials for Reinstallation:

1. Repair and clean items for reuse as indicated.
2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.

### C. Existing Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after alteration and other construction work in the vicinity is complete.

### D. Storage: Catalog and store items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.

1. Identify each item for reinstallation with a nonpermanent mark to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying marks.
2. Secure stored materials to protect from theft.
3. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 deg F or more above the dew point.

### E. Storage Space:

1. Owner will arrange for limited on-site location(s) for free storage of salvaged material. This storage space does not include security and climate control for stored material.
2. Arrange for off-site locations for storage and protection of salvaged material that cannot be stored and protected on-site.

#### 1.10 FIELD CONDITIONS

- A. Survey of Existing Conditions: Record existing conditions that affect the Work by use of preconstruction photographs.
  1. Comply with requirements specified in Section 013233 "Photographic Documentation."
- B. Discrepancies: Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.
- C. Owner's Removals: Before beginning alteration work, verify in correspondence with Owner that required items have been removed.
- D. Size Limitations in Existing Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within existing spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.

#### PART 2 - PRODUCTS - (Not Used)

#### PART 3 - EXECUTION

##### 3.1 PROTECTION

- A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from alteration work.
  1. Use only proven protection methods, appropriate to each area and surface being protected.
  2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where alteration work is being performed.
  3. Erect temporary barriers to form and maintain fire-egress routes.
  4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during alteration work.
  5. Contain dust and debris generated by alteration work, and prevent it from reaching the public or adjacent surfaces.
  6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
  7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
  8. Provide supplemental sound-control treatment to isolate demolition work from other areas of the building.
- B. Temporary Protection of Materials to Remain:

1. Protect existing materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
  2. Do not attach temporary protection to existing surfaces except as indicated as part of the alteration work program.
- C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
- D. Utility and Communications Services:
1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by alteration work before commencing operations.
  2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for alteration work.
  3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.
- E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.
1. Prevent solids such as adhesive or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from alteration work.
  2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.
- F. Existing Roofing: Prior to the start of work in an area, install roofing protection.

### 3.2 PROTECTION FROM FIRE

- A. General: Follow fire-prevention plan and the following:
1. Comply with NFPA 241 requirements unless otherwise indicated.
  2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.
    - a. If combustible material cannot be removed, provide fire blankets to cover such materials.
- B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:



1. Obtain Owner's approval for operations involving use of welding or other high-heat equipment. Notify Owner 72 hours before each occurrence, indicating location of such work.
  2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
  3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
  4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
  5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
  6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:
    - a. Train each fire watch in the proper operation of fire-control equipment and alarms.
    - b. Prohibit fire-watch personnel from other work that would be a distraction from fire-watch duties.
    - c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
    - d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.
    - e. Maintain fire-watch personnel at each area of Project site until 60 minutes after conclusion of daily work.
- C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire-watch personnel are trained in fire-extinguisher and blanket use.
- D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.
1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is complete.

### 3.3 PROTECTION DURING APPLICATION OF CHEMICALS

- A. Protect motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm or spillage resulting from applications of chemicals and adhesives.
- B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in alteration work program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents

or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.

- C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.
- D. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.
- E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

### 3.4 GENERAL ALTERATION WORK

- A. Have specialty work performed only by qualified specialists.
- B. Ensure that supervisory personnel are present when work begins and during its progress.
- C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs. Comply with requirements in Section 013233 "Photographic Documentation."
- D. Perform surveys of Project site as the Work progresses to detect hazards resulting from alterations.
- E. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.
  - 1. Do not proceed with the work in question until directed by Architect.

END OF SECTION 013516

## SECTION 014000 - QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner or authorities having jurisdiction are not limited by provisions of this Section.
  - 4. Specific test and inspection requirements are not specified in this Section.
- C. Related Requirements:
  - 1. Section 012100 "Allowances" for testing and inspecting allowances.

#### 1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to

show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Laboratory Mockups: Full-size physical assemblies constructed at testing facility to verify performance characteristics.
  2. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
  3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

#### 1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

## 1.5 ACTION SUBMITTALS

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

## 1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data : For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
  2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
  2. Entity responsible for performing tests and inspections.
  3. Description of test and inspection.
  4. Identification of applicable standards.
  5. Identification of test and inspection methods.
  6. Number of tests and inspections required.
  7. Time schedule or time span for tests and inspections.
  8. Requirements for obtaining samples.
  9. Unique characteristics of each quality-control service.

## 1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
  - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
  - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
  - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
  - 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

## 1.8 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.

7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of technical representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
  2. Statement that equipment complies with requirements.
  3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  4. Statement whether conditions, products, and installation will affect warranty.
  5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.
- 1.9 QUALITY ASSURANCE
- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  - 1. Contractor responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.



- c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
  - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
  - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
  - f. When testing is complete, remove test specimens, assemblies and mockups; do not reuse products on Project.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
  2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
  3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
  4. Demonstrate the proposed range of aesthetic effects and workmanship.
  5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
    - a. Allow seven days for initial review and each re-review of each mockup.
  6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  7. Demolish and remove mockups when directed unless otherwise indicated.

#### 1.10 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
  3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.

- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owner, Architect and testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

#### 1.11 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
  2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
  4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  6. Retesting and reinspecting corrected work.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

## 3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Architect.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

## 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

## SECTION 014200 - REFERENCES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "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.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "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."
- E. "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.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

#### 1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

#### 1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
  - 1. AABC - Associated Air Balance Council; [www.aabc.com](http://www.aabc.com).
  - 2. AAMA - American Architectural Manufacturers Association; [www.aamanet.org](http://www.aamanet.org).
  - 3. AAPFCO - Association of American Plant Food Control Officials; [www.aapfco.org](http://www.aapfco.org).
  - 4. AASHTO - American Association of State Highway and Transportation Officials; [www.transportation.org](http://www.transportation.org).
  - 5. AATCC - American Association of Textile Chemists and Colorists; [www.aatcc.org](http://www.aatcc.org).
  - 6. ABMA - American Bearing Manufacturers Association; [www.americanbearings.org](http://www.americanbearings.org).
  - 7. ABMA - American Boiler Manufacturers Association; [www.abma.com](http://www.abma.com).
  - 8. ACI - American Concrete Institute; (Formerly: ACI International); [www.abma.com](http://www.abma.com).
  - 9. ACPA - American Concrete Pipe Association; [www.concrete-pipe.org](http://www.concrete-pipe.org).
  - 10. AEIC - Association of Edison Illuminating Companies, Inc. (The); [www.aeic.org](http://www.aeic.org).
  - 11. AF&PA - American Forest & Paper Association; [www.afandpa.org](http://www.afandpa.org).
  - 12. AGA - American Gas Association; [www.aga.org](http://www.aga.org).
  - 13. AHAM - Association of Home Appliance Manufacturers; [www.aham.org](http://www.aham.org).
  - 14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); [www.ahrinet.org](http://www.ahrinet.org).
  - 15. AI - Asphalt Institute; [www.asphaltinstitute.org](http://www.asphaltinstitute.org).
  - 16. AIA - American Institute of Architects (The); [www.aia.org](http://www.aia.org).
  - 17. AISC - American Institute of Steel Construction; [www.aisc.org](http://www.aisc.org).
  - 18. AISI - American Iron and Steel Institute; [www.steel.org](http://www.steel.org).
  - 19. AITC - American Institute of Timber Construction; [www.aitc-glulam.org](http://www.aitc-glulam.org).
  - 20. AMCA - Air Movement and Control Association International, Inc.; [www.amca.org](http://www.amca.org).
  - 21. ANSI - American National Standards Institute; [www.ansi.org](http://www.ansi.org).
  - 22. AOSA - Association of Official Seed Analysts, Inc.; [www.aosaseed.com](http://www.aosaseed.com).
  - 23. APA - APA - The Engineered Wood Association; [www.apawood.org](http://www.apawood.org).
  - 24. APA - Architectural Precast Association; [www.archprecast.org](http://www.archprecast.org).
  - 25. API - American Petroleum Institute; [www.api.org](http://www.api.org).
  - 26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
  - 27. ARI - American Refrigeration Institute; (See AHRI).

28. ARMA - Asphalt Roofing Manufacturers Association; [www.asphaltroofing.org](http://www.asphaltroofing.org).
29. ASCE - American Society of Civil Engineers; [www.asce.org](http://www.asce.org).
30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; [www.ashrae.org](http://www.ashrae.org).
32. ASME - ASME International; (American Society of Mechanical Engineers); [www.asme.org](http://www.asme.org).
33. ASSE - American Society of Safety Engineers (The); [www.asse.org](http://www.asse.org).
34. ASSE - American Society of Sanitary Engineering; [www.asse-plumbing.org](http://www.asse-plumbing.org).
35. ASTM - ASTM International; [www.astm.org](http://www.astm.org).
36. ATIS - Alliance for Telecommunications Industry Solutions; [www.atis.org](http://www.atis.org).
37. AWEA - American Wind Energy Association; [www.awea.org](http://www.awea.org).
38. AWI - Architectural Woodwork Institute; [www.awinet.org](http://www.awinet.org).
39. AWMAC - Architectural Woodwork Manufacturers Association of Canada; [www.awmac.com](http://www.awmac.com).
40. AWPA - American Wood Protection Association; [www.awpa.com](http://www.awpa.com).
41. AWS - American Welding Society; [www.aws.org](http://www.aws.org).
42. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
43. BHMA - Builders Hardware Manufacturers Association; [www.buildershardware.com](http://www.buildershardware.com).
44. BIA - Brick Industry Association (The); [www.gobrick.com](http://www.gobrick.com).
45. BICSI - BICSI, Inc.; [www.bicsi.org](http://www.bicsi.org).
46. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); [www.bifma.org](http://www.bifma.org).
47. BISSC - Baking Industry Sanitation Standards Committee; [www.bissc.org](http://www.bissc.org).
48. BWF - Badminton World Federation; (Formerly: International Badminton Federation); [www.bissc.org](http://www.bissc.org).
49. CDA - Copper Development Association; [www.copper.org](http://www.copper.org).
50. CEA - Canadian Electricity Association; [www.electricity.ca](http://www.electricity.ca).
51. CEA - Consumer Electronics Association; [www.ce.org](http://www.ce.org).
52. CFFA - Chemical Fabrics and Film Association, Inc.; [www.chemicalfabricsandfilm.com](http://www.chemicalfabricsandfilm.com).
53. CFSEI - Cold-Formed Steel Engineers Institute; [www.cfsei.org](http://www.cfsei.org).
54. CGA - Compressed Gas Association; [www.cganet.com](http://www.cganet.com).
55. CIMA - Cellulose Insulation Manufacturers Association; [www.cellulose.org](http://www.cellulose.org).
56. CISCA - Ceilings & Interior Systems Construction Association; [www.cisca.org](http://www.cisca.org).
57. CISPI - Cast Iron Soil Pipe Institute; [www.cispi.org](http://www.cispi.org).
58. CLFMI - Chain Link Fence Manufacturers Institute; [www.chainlinkinfo.org](http://www.chainlinkinfo.org).
59. CPA - Composite Panel Association; [www.pbmdf.com](http://www.pbmdf.com).
60. CRI - Carpet and Rug Institute (The); [www.carpet-rug.org](http://www.carpet-rug.org).
61. CRRC - Cool Roof Rating Council; [www.coolroofs.org](http://www.coolroofs.org).
62. CRSI - Concrete Reinforcing Steel Institute; [www.crsi.org](http://www.crsi.org).
63. CSA - Canadian Standards Association; [www.csa.ca](http://www.csa.ca).
64. CSA - CSA International; (Formerly: IAS - International Approval Services); [www.csa-international.org](http://www.csa-international.org).
65. CSI - Construction Specifications Institute (The); [www.csinet.org](http://www.csinet.org).
66. CSSB - Cedar Shake & Shingle Bureau; [www.cedarbureau.org](http://www.cedarbureau.org).
67. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); [www.cti.org](http://www.cti.org).
68. CWC - Composite Wood Council; (See CPA).
69. DASMA - Door and Access Systems Manufacturers Association; [www.dasma.com](http://www.dasma.com).
70. DHI - Door and Hardware Institute; [www.dhi.org](http://www.dhi.org).
71. ECA - Electronic Components Association; (See ECIA).

72. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
73. ECIA - Electronic Components Industry Association; [www.eciaonline.org](http://www.eciaonline.org).
74. EIA - Electronic Industries Alliance; (See TIA).
75. EIMA - EIFS Industry Members Association; [www.eima.com](http://www.eima.com).
76. EJMA - Expansion Joint Manufacturers Association, Inc.; [www.ejma.org](http://www.ejma.org).
77. ESD - ESD Association; (Electrostatic Discharge Association); [www.esda.org](http://www.esda.org).
78. ESTA - Entertainment Services and Technology Association; (See PLASA).
79. EVO - Efficiency Valuation Organization; [www.evo-world.org](http://www.evo-world.org).
80. FCI - Fluid Controls Institute; [www.fluidcontrolsinstitute.org](http://www.fluidcontrolsinstitute.org).
81. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); [www.fiba.com](http://www.fiba.com).
82. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); [www.fivb.org](http://www.fivb.org).
83. FM Approvals - FM Approvals LLC; [www.fmglobal.com](http://www.fmglobal.com).
84. FM Global - FM Global; (Formerly: FMG - FM Global); [www.fmglobal.com](http://www.fmglobal.com).
85. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; [www.floridarooft.com](http://www.floridarooft.com).
86. FSA - Fluid Sealing Association; [www.fluidsealing.com](http://www.fluidsealing.com).
87. FSC - Forest Stewardship Council U.S.; [www.fscus.org](http://www.fscus.org).
88. GA - Gypsum Association; [www.gypsum.org](http://www.gypsum.org).
89. GANA - Glass Association of North America; [www.glasswebsite.com](http://www.glasswebsite.com).
90. GS - Green Seal; [www.greenseal.org](http://www.greenseal.org).
91. HI - Hydraulic Institute; [www.pumps.org](http://www.pumps.org).
92. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
93. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
94. HPVA - Hardwood Plywood & Veneer Association; [www.hpva.org](http://www.hpva.org).
95. HPW - H. P. White Laboratory, Inc.; [www.hpwhite.com](http://www.hpwhite.com).
96. IAPSC - International Association of Professional Security Consultants; [www.iapsc.org](http://www.iapsc.org).
97. IAS - International Accreditation Service; [www.iasonline.org](http://www.iasonline.org).
98. IAS - International Approval Services; (See CSA).
99. ICBO - International Conference of Building Officials; (See ICC).
100. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
101. ICEA - Insulated Cable Engineers Association, Inc.; [www.icea.net](http://www.icea.net).
102. ICPA - International Cast Polymer Alliance; [www.icpa-hq.org](http://www.icpa-hq.org).
103. ICRI - International Concrete Repair Institute, Inc.; [www.icri.org](http://www.icri.org).
104. IEC - International Electrotechnical Commission; [www.iec.ch](http://www.iec.ch).
105. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); [www.ieee.org](http://www.ieee.org).
106. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); [www.ies.org](http://www.ies.org).
107. IESNA - Illuminating Engineering Society of North America; (See IES).
108. IEST - Institute of Environmental Sciences and Technology; [www.iest.org](http://www.iest.org).
109. IGMA - Insulating Glass Manufacturers Alliance; [www.igmaonline.org](http://www.igmaonline.org).
110. IGSHPA - International Ground Source Heat Pump Association; [www.igshpa.okstate.edu](http://www.igshpa.okstate.edu).
111. ILI - Indiana Limestone Institute of America, Inc.; [www.iliai.com](http://www.iliai.com).
112. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); [www.intertek.com](http://www.intertek.com).
113. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); [www.isa.org](http://www.isa.org).
114. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).



115. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); [www.isfanow.org](http://www.isfanow.org).
116. ISO - International Organization for Standardization; [www.iso.org](http://www.iso.org).
117. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
118. ITU - International Telecommunication Union; [www.itu.int/home](http://www.itu.int/home).
119. KCMA - Kitchen Cabinet Manufacturers Association; [www.kcma.org](http://www.kcma.org).
120. LMA - Laminating Materials Association; (See CPA).
121. LPI - Lightning Protection Institute; [www.lightning.org](http://www.lightning.org).
122. MBMA - Metal Building Manufacturers Association; [www.mbma.com](http://www.mbma.com).
123. MCA - Metal Construction Association; [www.metalconstruction.org](http://www.metalconstruction.org).
124. MFMA - Maple Flooring Manufacturers Association, Inc.; [www.maplefloor.org](http://www.maplefloor.org).
125. MFMA - Metal Framing Manufacturers Association, Inc.; [www.metalframingmfg.org](http://www.metalframingmfg.org).
126. MHIA - Material Handling Industry of America; [www.mhia.org](http://www.mhia.org).
127. MIA - Marble Institute of America; [www.marble-institute.com](http://www.marble-institute.com).
128. MMPA - Moulding & Millwork Producers Association; [www.wmmpa.com](http://www.wmmpa.com).
129. MPI - Master Painters Institute; [www.paintinfo.com](http://www.paintinfo.com).
130. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; [www.mss-hq.org](http://www.mss-hq.org).
131. NAAMM - National Association of Architectural Metal Manufacturers; [www.naamm.org](http://www.naamm.org).
132. NACE - NACE International; (National Association of Corrosion Engineers International); [www.nace.org](http://www.nace.org).
133. NADCA - National Air Duct Cleaners Association; [www.nadca.com](http://www.nadca.com).
134. NAIMA - North American Insulation Manufacturers Association; [www.naima.org](http://www.naima.org).
135. NBGQA - National Building Granite Quarries Association, Inc.; [www.nbgqa.com](http://www.nbgqa.com).
136. NBI - New Buildings Institute; [www.newbuildings.org](http://www.newbuildings.org).
137. NCAA - National Collegiate Athletic Association (The); [www.ncaa.org](http://www.ncaa.org).
138. NCMA - National Concrete Masonry Association; [www.ncma.org](http://www.ncma.org).
139. NEBB - National Environmental Balancing Bureau; [www.nebb.org](http://www.nebb.org).
140. NECA - National Electrical Contractors Association; [www.necanet.org](http://www.necanet.org).
141. NeLMA - Northeastern Lumber Manufacturers Association; [www.nelma.org](http://www.nelma.org).
142. NEMA - National Electrical Manufacturers Association; [www.nema.org](http://www.nema.org).
143. NETA - InterNational Electrical Testing Association; [www.netaworld.org](http://www.netaworld.org).
144. NFHS - National Federation of State High School Associations; [www.nfhs.org](http://www.nfhs.org).
145. NFPA - National Fire Protection Association; [www.nfpa.org](http://www.nfpa.org).
146. NFPA - NFPA International; (See NFPA).
147. NFRC - National Fenestration Rating Council; [www.nfrc.org](http://www.nfrc.org).
148. NHLA - National Hardwood Lumber Association; [www.nhla.com](http://www.nhla.com).
149. NLGA - National Lumber Grades Authority; [www.nlga.org](http://www.nlga.org).
150. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
151. NOMMA - National Ornamental & Miscellaneous Metals Association; [www.nomma.org](http://www.nomma.org).
152. NRCA - National Roofing Contractors Association; [www.nrca.net](http://www.nrca.net).
153. NRMCA - National Ready Mixed Concrete Association; [www.nrmca.org](http://www.nrmca.org).
154. NSF - NSF International; [www.nsf.org](http://www.nsf.org).
155. NSPE - National Society of Professional Engineers; [www.nspe.org](http://www.nspe.org).
156. NSSGA - National Stone, Sand & Gravel Association; [www.nssga.org](http://www.nssga.org).
157. NTMA - National Terrazzo & Mosaic Association, Inc. (The); [www.ntma.com](http://www.ntma.com).
158. NWFA - National Wood Flooring Association; [www.nwfa.org](http://www.nwfa.org).
159. PCI - Precast/Prestressed Concrete Institute; [www.pci.org](http://www.pci.org).
160. PDI - Plumbing & Drainage Institute; [www.pdionline.org](http://www.pdionline.org).

161. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); [www.plasa.org](http://www.plasa.org).
162. RCSC - Research Council on Structural Connections; [www.boltcouncil.org](http://www.boltcouncil.org).
163. RFCI - Resilient Floor Covering Institute; [www.rfci.com](http://www.rfci.com).
164. RIS - Redwood Inspection Service; [www.redwoodinspection.com](http://www.redwoodinspection.com).
165. SAE - SAE International; [www.sae.org](http://www.sae.org).
166. SCTE - Society of Cable Telecommunications Engineers; [www.scte.org](http://www.scte.org).
167. SDI - Steel Deck Institute; [www.sdi.org](http://www.sdi.org).
168. SDI - Steel Door Institute; [www.steeldoor.org](http://www.steeldoor.org).
169. SEFA - Scientific Equipment and Furniture Association (The); [www.sefalabs.com](http://www.sefalabs.com).
170. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
171. SIA - Security Industry Association; [www.siaonline.org](http://www.siaonline.org).
172. SJI - Steel Joist Institute; [www.steeljoist.org](http://www.steeljoist.org).
173. SMA - Screen Manufacturers Association; [www.smainfo.org](http://www.smainfo.org).
174. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; [www.smacna.org](http://www.smacna.org).
175. SMPTE - Society of Motion Picture and Television Engineers; [www.smpete.org](http://www.smpete.org).
176. SPFA - Spray Polyurethane Foam Alliance; [www.sprayfoam.org](http://www.sprayfoam.org).
177. SPIB - Southern Pine Inspection Bureau; [www.spib.org](http://www.spib.org).
178. SPRI - Single Ply Roofing Industry; [www.spri.org](http://www.spri.org).
179. SRCC - Solar Rating & Certification Corporation; [www.solar-rating.org](http://www.solar-rating.org).
180. SSINA - Specialty Steel Industry of North America; [www.ssina.com](http://www.ssina.com).
181. SSPC - SSPC: The Society for Protective Coatings; [www.sspc.org](http://www.sspc.org).
182. STI - Steel Tank Institute; [www.steeltank.com](http://www.steeltank.com).
183. SWI - Steel Window Institute; [www.steelwindows.com](http://www.steelwindows.com).
184. SWPA - Submersible Wastewater Pump Association; [www.swpa.org](http://www.swpa.org).
185. TCA - Tilt-Up Concrete Association; [www.tilt-up.org](http://www.tilt-up.org).
186. TCNA - Tile Council of North America, Inc.; [www.tileusa.com](http://www.tileusa.com).
187. TEMA - Tubular Exchanger Manufacturers Association, Inc.; [www.tema.org](http://www.tema.org).
188. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); [www.tiaonline.org](http://www.tiaonline.org).
189. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
190. TMS - The Masonry Society; [www.masonrysociety.org](http://www.masonrysociety.org).
191. TPI - Truss Plate Institute; [www.tpinst.org](http://www.tpinst.org).
192. TPI - Turfgrass Producers International; [www.turfgrasssod.org](http://www.turfgrasssod.org).
193. TRI - Tile Roofing Institute; [www.tilerroofing.org](http://www.tilerroofing.org).
194. UL - Underwriters Laboratories Inc.; [www.ul.com](http://www.ul.com).
195. UNI - Uni-Bell PVC Pipe Association; [www.uni-bell.org](http://www.uni-bell.org).
196. USAV - USA Volleyball; [www.usavolleyball.org](http://www.usavolleyball.org).
197. USGBC - U.S. Green Building Council; [www.usgbc.org](http://www.usgbc.org).
198. USITT - United States Institute for Theatre Technology, Inc.; [www.usitt.org](http://www.usitt.org).
199. WASTEC - Waste Equipment Technology Association; [www.wastec.org](http://www.wastec.org).
200. WCLIB - West Coast Lumber Inspection Bureau; [www.wclib.org](http://www.wclib.org).
201. WCMA - Window Covering Manufacturers Association; [www.wcmanet.org](http://www.wcmanet.org).
202. WDMA - Window & Door Manufacturers Association; [www.wdma.com](http://www.wdma.com).
203. WI - Woodwork Institute; [www.wicnet.org](http://www.wicnet.org).
204. WSRCA - Western States Roofing Contractors Association; [www.wsrca.com](http://www.wsrca.com).
205. WWPA - Western Wood Products Association; [www.wwpa.org](http://www.wwpa.org).

- C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
1. DIN - Deutsches Institut fur Normung e.V.; [www.din.de](http://www.din.de).
  2. IAPMO - International Association of Plumbing and Mechanical Officials; [www.iapmo.org](http://www.iapmo.org).
  3. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
  4. ICC-ES - ICC Evaluation Service, LLC; [www.icc-es.org](http://www.icc-es.org).
- D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.
1. COE - Army Corps of Engineers; [www.usace.army.mil](http://www.usace.army.mil).
  2. CPSC - Consumer Product Safety Commission; [www.cpsc.gov](http://www.cpsc.gov).
  3. DOC - Department of Commerce; National Institute of Standards and Technology; [www.nist.gov](http://www.nist.gov).
  4. DOD - Department of Defense; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
  5. DOE - Department of Energy; [www.energy.gov](http://www.energy.gov).
  6. EPA - Environmental Protection Agency; [www.epa.gov](http://www.epa.gov).
  7. FAA - Federal Aviation Administration; [www.faa.gov](http://www.faa.gov).
  8. FG - Federal Government Publications; [www.gpo.gov](http://www.gpo.gov).
  9. GSA - General Services Administration; [www.gsa.gov](http://www.gsa.gov).
  10. HUD - Department of Housing and Urban Development; [www.hud.gov](http://www.hud.gov).
  11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; [www.eetd.lbl.gov](http://www.eetd.lbl.gov).
  12. OSHA - Occupational Safety & Health Administration; [www.osha.gov](http://www.osha.gov).
  13. SD - Department of State; [www.state.gov](http://www.state.gov).
  14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; [www.trb.org](http://www.trb.org).
  15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; [www.ars.usda.gov](http://www.ars.usda.gov).
  16. USDA - Department of Agriculture; Rural Utilities Service; [www.usda.gov](http://www.usda.gov).
  17. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; [www.ojp.usdoj.gov](http://www.ojp.usdoj.gov).
  18. USP - U.S. Pharmacopeial Convention; [www.usp.org](http://www.usp.org).
  19. USPS - United States Postal Service; [www.usps.com](http://www.usps.com).
- E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CFR - Code of Federal Regulations; Available from Government Printing Office; [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys).
  2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
  3. DSCC - Defense Supply Center Columbus; (See FS).
  4. FED-STD - Federal Standard; (See FS).

5. FS - Federal Specification; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
    - a. Available from Defense Standardization Program; [www.dsp.dla.mil](http://www.dsp.dla.mil).
    - b. Available from General Services Administration; [www.gsa.gov](http://www.gsa.gov).
    - c. Available from National Institute of Building Sciences/Whole Building Design Guide; [www.wbdg.org/ccb](http://www.wbdg.org/ccb).
  6. MILSPEC - Military Specification and Standards; (See DOD).
  7. USAB - United States Access Board; [www.access-board.gov](http://www.access-board.gov).
  8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).
- F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; [www.bearhfti.ca.gov](http://www.bearhfti.ca.gov).
  2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; [www.calregs.com](http://www.calregs.com).
  3. CDHS; California Department of Health Services; (See CDPH).
  4. CDPH; California Department of Public Health; Indoor Air Quality Program; [www.cal-iaq.org](http://www.cal-iaq.org).
  5. CPUC; California Public Utilities Commission; [www.cpuc.ca.gov](http://www.cpuc.ca.gov).
  6. SCAQMD; South Coast Air Quality Management District; [www.aqmd.gov](http://www.aqmd.gov).
  7. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; [www.txforestservation.tamu.edu](http://www.txforestservation.tamu.edu).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

## SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

#### 1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to Architect, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
- C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
  - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.

2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
  3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- D. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
1. Locations of dust-control partitions at each phase of work.
  2. HVAC system isolation schematic drawing.
  3. Location of proposed air-filtration system discharge.
  4. Waste handling procedures.
  5. Other dust-control measures.

## 1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and Florida Building Code Accessibility Code.

## 1.6 PROJECT CONDITIONS

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

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide galvanized-steel bases for supporting posts.
- B. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

- C. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.

## 2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
  - 1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
  - 2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot-square tack and marker boards.
  - 3. Drinking water and private toilet.
  - 4. Coffee machine and supplies.
  - 5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
  - 6. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
  - 1. Store combustible materials apart from building.

## 2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
  - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
  - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction and clean HVAC system as required in Section 017700 "Closeout Procedures".
- C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
  - 1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

### 3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
  - 1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- D. Cooling: Provide temporary cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- E. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
  - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
    - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
    - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.



2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
  3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.
- G. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
  2. Install lighting for Project identification sign.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
  2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- D. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
1. Identification Signs: Provide Project identification signs as indicated on Drawings.
  2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

- a. Provide temporary, directional signs for construction personnel and visitors.
3. Maintain and touchup signs so they are legible at all times.
- E. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
  - F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
  - G. Temporary Elevator Use: Use of elevators is not permitted.
  - H. Existing Elevator Use: Use of Owner's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
    1. Do not load elevators beyond their rated weight capacity.
    2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
  - I. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
  - J. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
    1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
- 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
  - B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
    1. Comply with work restrictions specified in Section 011000 "Summary."
  - C. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control

procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

- D. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
  - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
  - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- E. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
- F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- G. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- H. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings.
  - 1. Construct covered walkways using scaffold or shoring framing.
  - 2. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
  - 3. Paint and maintain appearance of walkway for duration of the Work.
- I. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
  - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- J. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.
  - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
  - 2. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.

- a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.
  3. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
  4. Insulate partitions to control noise transmission to occupied areas.
  5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
  6. Protect air-handling equipment.
  7. Provide walk-off mats at each entrance through temporary partition.
- K. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
1. Prohibit smoking in construction areas.
  2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
  3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
  4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

### 3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
  2. Protect stored and installed material from flowing or standing water.
  3. Keep porous and organic materials from coming into prolonged contact with concrete.
  4. Remove standing water from decks.
  5. Keep deck openings covered or dammed.

### 3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Operate Project-identification-sign lighting daily from dusk until 12:00 midnight.
- D. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- E. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
  2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
  3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

## SECTION 016000 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
  - 1. Section 012100 "Allowances" for products selected under an allowance.
  - 2. Section 012500 "Substitution Procedures" for requests for substitutions.
  - 3. Section 014200 "References" for applicable industry standards for products specified.

#### 1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

#### 1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
  2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
    - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

#### 1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
  2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

## 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. **Manufacturer's Warranty:** Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. **Special Warranty:** Written warranty required by the Contract Documents to provide specific rights for Owner.

- B. **Special Warranties:** Prepare a written document that contains appropriate terms and identification, ready for execution.

1. **Manufacturer's Standard Form:** Modified to include Project-specific information and properly executed.
2. **Specified Form:** When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

- C. **Submittal Time:** Comply with requirements in Section 017700 "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. **General Product Requirements:** Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.



1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:
  - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
4. Manufacturers:
  - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics

that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
  - 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
  - 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  - 3. Evidence that proposed product provides specified warranty.
  - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

## SECTION 017300 - EXECUTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.

- B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.
5. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

#### 1.3 DEFINITIONS

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

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For professional engineer.

- B. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
  2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
  3. Products: List products to be used for patching and firms or entities that will perform patching work.
  4. Dates: Indicate when cutting and patching will be performed.
  5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
    - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

## 1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
  2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
  3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
  4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential

interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
  - 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
  - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
  2. List of detrimental conditions, including substrates.
  3. List of unacceptable installation tolerances.
  4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

### 3.3 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
  4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.4 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.

- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.



- a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

### 3.5 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
  1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

### 3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.

- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

## SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Salvaging nonhazardous demolition and construction waste.
  - 2. Recycling nonhazardous demolition and construction waste.
  - 3. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
  - 1. Section 024119 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements, and for disposition of hazardous waste.

#### 1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials.

#### 1.5 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 30 days of date established for the Notice to Proceed.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- B. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- C. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- D. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- E. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- F. Qualification Data: For waste management coordinator and refrigerant recovery technician.
- G. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

#### 1.7 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

- D. Waste Management Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
1. Review and discuss waste management plan including responsibilities of waste management coordinator.
  2. Review requirements for documenting quantities of each type of waste and its disposition.
  3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
  4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
  5. Review waste management requirements for each trade.

## 1.8 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
  2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
  3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
  4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
  5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
  6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
  - 1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
  - 1. Distribute waste management plan to everyone concerned within three days of submittal return.
  - 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
  - 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

### 3.2 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
  - 3. Store items in a secure area until installation.
  - 4. Protect items from damage during transport and storage.
  - 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- B. Salvaged Items for Sale and Donation: Not permitted on Project site.
- C. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
  - 1. Clean salvaged items.

2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
  3. Store items in a secure area until delivery to Owner.
  4. Transport items to Owner's storage area designated by Owner.
  5. Protect items from damage during transport and storage.
- D. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.
- E. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
- F. Plumbing Fixtures: Separate by type and size.
- G. Lighting Fixtures: Separate lamps by type and protect from breakage.
- H. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

### 3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
    - a. Inspect containers and bins for contamination and remove contaminated materials if found.
  2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
  4. Store components off the ground and protect from the weather.
  5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.



### 3.4 RECYCLING CONSTRUCTION WASTE

#### A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

### 3.5 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017419

## SECTION 017700 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties.
  - 4. Final cleaning.
  - 5. Repair of the Work.
- B. Related Requirements:
  - 1. Section 013233 "Photographic Documentation" for submitting final completion construction photographic documentation.
  - 2. Section 017300 "Execution" for progress cleaning of Project site.
  - 3. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 4. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
  - 5. Section 017900 "Demonstration and Training" for requirements for instructing Owner's personnel.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

- C. Field Report: For pest control inspection.

## 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

## 1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
  - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
  - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
    - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
  - 5. Submit test/adjust/balance records.
  - 6. Submit sustainable design submittals not previously submitted.
  - 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
  - 1. Advise Owner of pending insurance changeover requirements.
  - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  - 3. Complete startup and testing of systems and equipment.

4. Perform preventive maintenance on equipment used prior to Substantial Completion.
  5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
  6. Advise Owner of changeover in heat and other utilities.
  7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
  8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  9. Complete final cleaning requirements, including touchup painting.
  10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for final completion.

## 1.7 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
  2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

## 1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Page number.
  4. Submit list of incomplete items in the following format:
    - a. PDF electronic file. Architect will return annotated file.

## 1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
  4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to building.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - h. Sweep concrete floors broom clean in unoccupied spaces.
    - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
    - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
    - k. Remove labels that are not permanent.

- l. Wipe surfaces of mechanical and electrical equipment[, **elevator equipment,**] and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
    - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
  - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
  - q. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in 017419 "Construction Waste Management and Disposal."

### 3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
  2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
  3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
  4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700



## SECTION 017823 - OPERATION AND MAINTENANCE DATA

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation and maintenance documentation directory.
  - 2. Emergency manuals.
  - 3. Operation manuals for systems, subsystems, and equipment.
  - 4. Product maintenance manuals.
  - 5. Systems and equipment maintenance manuals.
- B. Related Requirements:
  - 1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

#### 1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
  - 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
  - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
  - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.

- a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
  - b. Enable inserted reviewer comments on draft submittals.
- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

## PART 2 - PRODUCTS

### 2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
1. List of documents.
  2. List of systems.
  3. List of equipment.
  4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

## 2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
1. Title page.
  2. Table of contents.
  3. Manual contents.
- B. Title Page: Include the following information:
1. Subject matter included in manual.
  2. Name and address of Project.
  3. Name and address of Owner.
  4. Date of submittal.
  5. Name and contact information for Contractor.
  6. Name and contact information for Construction Manager.
  7. Name and contact information for Architect.
  8. Name and contact information for Commissioning Authority.
  9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
  10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
  2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

## 2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
1. Type of emergency.
  2. Emergency instructions.
  3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Fire.
  2. Flood.
  3. Gas leak.
  4. Water leak.
  5. Power failure.
  6. Water outage.
  7. System, subsystem, or equipment failure.
  8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
  2. Shutdown instructions for each type of emergency.
  3. Operating instructions for conditions outside normal operating limits.
  4. Required sequences for electric or electronic systems.
  5. Special operating instructions and procedures.

## 2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
  2. Performance and design criteria if Contractor has delegated design responsibility.
  3. Operating standards.
  4. Operating procedures.
  5. Operating logs.
  6. Wiring diagrams.
  7. Control diagrams.
  8. Piped system diagrams.
  9. Precautions against improper use.
  10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
  2. Manufacturer's name.
  3. Equipment identification with serial number of each component.
  4. Equipment function.
  5. Operating characteristics.
  6. Limiting conditions.
  7. Performance curves.
  8. Engineering data and tests.
  9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
  2. Equipment or system break-in procedures.
  3. Routine and normal operating instructions.
  4. Regulation and control procedures.
  5. Instructions on stopping.
  6. Normal shutdown instructions.
  7. Seasonal and weekend operating instructions.
  8. Required sequences for electric or electronic systems.
  9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

## 2.5 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
  2. Manufacturer's name.
  3. Color, pattern, and texture.
  4. Material and chemical composition.
  5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
  2. Types of cleaning agents to be used and methods of cleaning.
  3. List of cleaning agents and methods of cleaning detrimental to product.
  4. Schedule for routine cleaning and maintenance.
  5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

## 2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins.
  2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  3. Identification and nomenclature of parts and components.
  4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
  2. Troubleshooting guide.
  3. Precautions against improper maintenance.
  4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  5. Aligning, adjusting, and checking instructions.
  6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

### PART 3 - EXECUTION

#### 3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
  2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of operation and maintenance manuals.
  2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents."
- G. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823



## SECTION 017839 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
  - 4. Miscellaneous record submittals.
- B. Related Requirements:
  - 1. Section 017300 "Execution" for final property survey.
  - 2. Section 017700 "Closeout Procedures" for general closeout procedures.
  - 3. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set(s) of marked-up record prints.
  - 2. Number of Copies: Submit copies of record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit PDF electronic files of scanned record prints and one of file prints.
      - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
    - b. Final Submittal:
      - 1) Submit PDF electronic files of scanned record prints and three set(s) of prints.
      - 2) Print each drawing, whether or not changes and additional information were recorded.
    - c. Final Submittal:
      - 1) Submit record digital data files and three set(s) of record digital data file plots.

- 2) Plot each drawing file, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
  1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.
- E. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

## PART 2 - PRODUCTS

### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
  1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding archive photographic documentation.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.

- i. Locations of concealed internal utilities.
    - j. Changes made by Change Order or [**Construction**] [**Work**] Change Directive.
    - k. Changes made following Architect's written orders.
    - l. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.
  3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect[ **and Construction Manager**]. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
  1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
  2. Format: DWG, Version Autocad 2018 Microsoft Windows operating system.
  3. Format: Annotated PDF electronic file with comment function enabled.
  4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
  5. Refer instances of uncertainty to Architect for resolution.
  6. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
    - a. See Section 013300 "Submittal Procedures" for requirements related to use of Architect's digital data files.
    - b. Architect will provide data file layer information. Record markups in separate layers.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
  1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Format: Annotated PDF electronic file with comment function enabled.
  3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
  4. Identification: As follows:
    - a. Project name.
    - b. Date.

- c. Designation "PROJECT RECORD DRAWINGS."
- d. Name of Architect.
- e. Name of Contractor.

## 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  - 4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
  - 5. Note related Change Orders and record Drawings where applicable.
- B. Format: Submit record Specifications as scanned PDF electronic file(s) of marked-up paper copy of Specifications.

## 2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  - 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as scanned PDF electronic file(s) of marked-up paper copy of Product Data.
  - 1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

## 2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

### PART 3 - EXECUTION

#### 3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 017839

## SECTION 017900 - DEMONSTRATION AND TRAINING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
  - 1. Demonstration of operation of systems, subsystems, and equipment.
  - 2. Training in operation and maintenance of systems, subsystems, and equipment.
  - 3. Demonstration and training video recordings.
- B. Allowances: Furnish demonstration and training instruction time under the Demonstration and Training Allowance as specified in Section 012100 "Allowances."

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
  - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.
- B. Qualification Data: For instructor.
- C. Attendance Record: For each training module, submit list of participants and length of instruction time.
- D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

#### 1.4 CLOSEOUT SUBMITTALS

- 1. At completion of training, submit complete training manual(s) for Owner's use in PDF electronic file format.

## 1.5 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.
- D. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:
  - 1. Inspect and discuss locations and other facilities required for instruction.
  - 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
  - 3. Review required content of instruction.
  - 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

## 1.6 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

## PART 2 - PRODUCTS

### 2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
  - a. System, subsystem, and equipment descriptions.
  - b. Performance and design criteria if Contractor is delegated design responsibility.
  - c. Operating standards.
  - d. Regulatory requirements.
  - e. Equipment function.
  - f. Operating characteristics.
  - g. Limiting conditions.
  - h. Performance curves.
  
2. Documentation: Review the following items in detail:
  - a. Emergency manuals.
  - b. Operations manuals.
  - c. Maintenance manuals.
  - d. Project record documents.
  - e. Identification systems.
  - f. Warranties and bonds.
  - g. Maintenance service agreements and similar continuing commitments.
  
3. Emergencies: Include the following, as applicable:
  - a. Instructions on meaning of warnings, trouble indications, and error messages.
  - b. Instructions on stopping.
  - c. Shutdown instructions for each type of emergency.
  - d. Operating instructions for conditions outside of normal operating limits.
  - e. Sequences for electric or electronic systems.
  - f. Special operating instructions and procedures.
  
4. Operations: Include the following, as applicable:
  - a. Startup procedures.
  - b. Equipment or system break-in procedures.
  - c. Routine and normal operating instructions.
  - d. Regulation and control procedures.
  - e. Control sequences.
  - f. Safety procedures.
  - g. Instructions on stopping.
  - h. Normal shutdown instructions.
  - i. Operating procedures for emergencies.
  - j. Operating procedures for system, subsystem, or equipment failure.
  - k. Seasonal and weekend operating instructions.
  - l. Required sequences for electric or electronic systems.
  - m. Special operating instructions and procedures.
  
5. Adjustments: Include the following:
  - a. Alignments.
  - b. Checking adjustments.
  - c. Noise and vibration adjustments.



- d. Economy and efficiency adjustments.
- 6. Troubleshooting: Include the following:
  - a. Diagnostic instructions.
  - b. Test and inspection procedures.
- 7. Maintenance: Include the following:
  - a. Inspection procedures.
  - b. Types of cleaning agents to be used and methods of cleaning.
  - c. List of cleaning agents and methods of cleaning detrimental to product.
  - d. Procedures for routine cleaning
  - e. Procedures for preventive maintenance.
  - f. Procedures for routine maintenance.
  - g. Instruction on use of special tools.
- 8. Repairs: Include the following:
  - a. Diagnosis instructions.
  - b. Repair instructions.
  - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - d. Instructions for identifying parts and components.
  - e. Review of spare parts needed for operation and maintenance.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

#### 3.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
  - 1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
  - 2. Owner will furnish an instructor to describe Owner's operational philosophy.
  - 3. Owner will furnish Contractor with names and positions of participants.

- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  - 1. Schedule training with Owner, through Architect, with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.
- F. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION 017900

## SECTION 024119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Demolition and removal of selected portions of building or structure.

- B. Related Requirements:

- 1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
  - 2. Section 017300 "Execution" for cutting and patching procedures.
  - 3. Section 013516 "Alteration Project Procedures" for general protection and work procedures for alteration projects.

#### 1.3 DEFINITIONS

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

#### 1.4 MATERIALS OWNERSHIP

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

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

#### 1.5 PREINSTALLATION MEETINGS

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

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Engineering Survey: Submit engineering survey of condition of building.
- C. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property for environmental protection, for dust control and for noise control. Indicate proposed locations and construction of barriers.
- D. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's and other tenants' on-site operations are uninterrupted.
  - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
  - 3. Coordination for shutoff, capping, and continuation of utility services.
  - 4. Use of elevator and stairs.
  - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- E. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- F. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

## 1.7 CLOSEOUT SUBMITTALS

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

## 1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  - 1. Hazardous materials will be removed by Owner before start of the Work.
  - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.

## 1.9 WARRANTY

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

## 1.10 COORDINATION

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

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Engage a professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
  - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- D. Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.
- E. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- F. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.
  - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
  - 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
  - 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

### 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
  - 2. Arrange to shut off utilities with utility companies.
  - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

### 3.3 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - 4. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

### 3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  5. Maintain fire watch during and for at least 1 hour after flame-cutting operations.
  6. Maintain adequate ventilation when using cutting torches.
  7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
  9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  10. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
1. Clean salvaged items.
  2. Pack or crate items after cleaning. Identify contents of containers.
  3. Store items in a secure area until delivery to Owner.
  4. Transport items to Owner's storage area designated by Owner.
  5. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
  2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  3. Protect items from damage during transport and storage.
  4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.



### 3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight. See roofing specification sections for new roofing requirements.
1. Remove existing roof membrane, flashings, copings, and roof accessories.
  2. Remove existing roofing system down to substrate.

### 3.6 DISPOSAL OF DEMOLISHED MATERIALS

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

### 3.7 CLEANING

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

END OF SECTION 024119

## SECTION 051200 - STRUCTURAL STEEL FRAMING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Structural steel.

B. Related Requirements:

1. Section 053100 "Steel Decking" for field installation of shear stud connectors through deck.

#### 1.2 DEFINITIONS

- A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.

#### 1.3 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

#### 1.4 ACTION SUBMITTALS

A. Product Data:

1. Structural-steel materials.
2. High-strength, bolt-nut-washer assemblies.
3. Threaded rods.
4. Shop primer.
5. Galvanized-steel primer.
6. Etching cleaner.
7. Galvanized repair paint.

B. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include embedment Drawings.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Mill test reports for structural-steel materials, including chemical and physical properties.
- C. Survey of existing conditions.
- D. Field quality-control reports.

## 1.6 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1/D1.1M.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.
  - 1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.
- B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
  - 1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
  - 2. Clean and relubricate bolts and nuts that become dry or rusty before use.
  - 3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F3125/F3125M, Grade F1852 bolt assemblies and for retesting bolt assemblies after lubrication.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Comply with applicable provisions of the following specifications and documents:
  - 1. ANSI/AISC 303.
  - 2. ANSI/AISC 360.
  - 3. RCSC's "Specification for Structural Joints Using High-Strength Bolts."

### 2.2 STRUCTURAL-STEEL MATERIALS

- A. W-Shapes: ASTM A992/A992M, Grade 50.

- B. Channels and Angles: ASTM A36/A36M
- C. Plate and Bar: ASTM A36/A36M
- D. Cold-Formed Hollow Structural Sections: ASTM A500/A500M, Grade C
- E. Steel Pipe: ASTM A53/A53M, Type E or Type S, Grade B.
- F. Welding Electrodes: Comply with AWS requirements.

## 2.3 BOLTS AND CONNECTORS

- A. High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 1, heavy-hex steel structural bolts
- B. High-Strength A490 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A490, Type 1, heavy-hex steel structural bolts

## 2.4 RODS

- A. Threaded Rods: **ASTM A36/A36M**
  - 1. Nuts: ASTM A63 heavy-hex carbon steel.
  - 2. Washers: ASTM F436, Type 1, hardened.
  - 3. Finish: as noted on plan

## 2.5 PRIMER

- A. Steel Primer:
  - 1. Comply with Section 099113 "Exterior Painting," Section 099123 "Interior Painting," and Section 099600 "High-Performance Coatings."
  - 2. SSPC-Paint 23, latex primer.
  - 3. Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.
- B. Galvanized-Steel Primer: MPI#26.
  - 1. Etching Cleaner: MPI#25, for galvanized steel.
  - 2. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20

## 2.6 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.
  - 1. Camber structural-steel members where indicated.
  - 2. Fabricate beams with rolling camber up.

3. Identify high-strength structural steel in accordance with ASTM A6/A6M and maintain markings until structural-steel framing has been erected.
  4. Mark and match-mark materials for field assembly.
  5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.
- C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.
- D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.
- E. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.
1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
  2. Weld threaded nuts to framing and other specialty items indicated to receive other work.

## 2.7 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel in accordance with ASTM A123/A123M.
1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.
- B. Surface Preparation of Steel: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces in accordance with the following specifications and standards:
1. SSPC-SP 2.
  2. SSPC-SP 3.
  3. SSPC-SP 7 (WAB)/NACE WAB-4.
- C. Surface Preparation of Galvanized Steel: Prepare galvanized-steel surfaces for shop priming by thoroughly cleaning steel of grease, dirt, oil, flux, and other foreign matter, and treating with etching cleaner or in accordance with SSPC-SP 16.
- D. Priming: Immediately after surface preparation, apply primer in accordance with manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

## EXECUTION

### 2.8 EXAMINATION

- A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
  - 1. Prepare a certified survey of existing conditions. Include bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 2.9 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated on Drawings.

### 2.10 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.
- B. Maintain erection tolerances of structural steel within ANSI/AISC 303.
- C. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
  - 1. Level and plumb individual members of structure. Slope roof framing members to slopes indicated on Drawings.
- D. Splice members only where indicated.
- E. Do not use thermal cutting during erection
- F. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

### 2.11 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt and joint type specified.

1. Joint Type: Snug tightened
- B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
  1. Comply with ANSI/AISC 303 and ANSI/AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
  2. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.

## 2.12 REPAIR

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing, and repair galvanizing to comply with ASTM A780/A780M.
- B. Touchup Painting:
  1. Immediately after erection, clean exposed areas where primer is damaged or missing, and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
    - a. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
  2. Cleaning and touchup painting are specified in Section 099113 "Exterior Painting." Section 099600 "High-Performance Coatings."
- C. Touchup Priming: Cleaning and touchup priming are specified in Section 099600 "High-Performance Coatings."

## 2.13 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector to perform the following special inspections:
  1. Verify structural-steel materials and inspect steel frame joint details.
  2. Verify weld materials and inspect welds.
  3. Verify connection materials and inspect high-strength bolted connections.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
  1. Bolted Connections: Inspect bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
  2. Welded Connections: Visually inspect field welds in accordance with AWS D1.1/D1.1M..

END OF SECTION 051200

## SECTION 053100 - STEEL DECKING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Roof deck.

B. Related Requirements:

1. Section 051200 "Structural Steel Framing" for shop- and field-welded shear connectors.

#### 1.2 ACTION SUBMITTALS

A. Product Data:

1. Roof deck.

B. Shop Drawings:

1. Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

#### 1.3 INFORMATIONAL SUBMITTALS

A. Certificates:

1. Welding certificates.
2. Product Certificates: For each type of steel deck.

B. Field Quality-Control Submittals:

1. Field quality-control reports.

C. Qualification Statements: For welding personnel and testing agency.

#### 1.4 QUALITY ASSURANCE

A. Qualifications:

1. Welding Qualifications: Qualify procedures and personnel in accordance with SDI QA/QC and the following welding codes:
  - a. AWS D1.1/D1.1M.
  - b. AWS D1.3/D1.3M.



## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Store products in accordance with SDI MOC3. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

## 1.6 PERFORMANCE REQUIREMENTS

- A. AISI Specifications: Comply with calculated structural characteristics of steel deck in accordance with AISI S100.

## 1.7 ROOF DECK

- A. Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with SDI RD and with the following:
  - 1. As indicated on drawings.

## 1.8 ACCESSORIES

- A. Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.
- B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.
- C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.
- D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.
- E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.
- F. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck unless otherwise indicated.
- G. Galvanizing Repair Paint: ASTM A780/A780M SSPC-Paint 20 or MIL-P-21035B, with dry film containing a minimum of 94 percent zinc dust by weight.
- H. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

## PART 2 - EXECUTION

### 2.1 EXAMINATION

- A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 2.2 INSTALLATION, GENERAL

- A. Install deck panels and accessories in accordance with SDI C, SDI NC, and SDI RD, as applicable; manufacturer's written instructions; and requirements in this Section.
- B. Install temporary shoring before placing deck panels if required to meet deflection limitations.
- C. Locate deck bundles to prevent overloading of supporting members.
- D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.
- E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.
- F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.
- G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.
- H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.
- I. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install in accordance with deck manufacturer's written instructions.

### 2.3 INSTALLATION OF ROOF DECK

- A. Fasten roof-deck panels to steel supporting members as indicated on drawings.
- B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of one-half of the span or as indicated on drawing:
  - 1. Mechanically fasten with self-drilling, No. 10 diameter or larger, carbon-steel screws.
  - 2. Mechanically clinch or button punch.
- C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:

1. End Joints: Lapped 2 inches minimum or butted at Contractor's option.
- D. Roof Sump Pans and Sump Plates: Install over openings provided in roof deck and mechanically fasten flanges to top of deck. Space mechanical fasteners not more than 12 inches apart with at least one fastener at each corner.
  1. Install reinforcing channels or zees in ribs to span between supports and mechanically fasten.
- E. Miscellaneous Roof-Deck Accessories: Install ridge and valley plates, finish strips, end closures, and reinforcing channels in accordance with deck manufacturer's written instructions. Mechanically fasten to substrate to provide a complete deck installation.
  1. Weld cover plates at changes in direction of roof-deck panels unless otherwise indicated.

## 2.4 REPAIR

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint in accordance with ASTM A780/A780M and manufacturer's written instructions.
- B. Repair Painting:
  1. Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.

## 2.5 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Tests and Inspections:
  1. Special inspections and qualification of welding special inspectors for cold-formed steel floor and roof deck in accordance with quality-assurance inspection requirements of SDI QA/QC.
    - a. Field welds will be subject to inspection.
  2. Steel decking will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

END OF SECTION 053100

## SECTION 061000 - ROUGH CARPENTRY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  1. Rooftop equipment bases and support curbs.
  2. Wood blocking
  3. Wood sleepers.
  4. Plywood panels.

#### 1.3 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.
- C. Exposed Framing: Framing not concealed by other construction.
- D. Timber: Lumber of 5 inches nominal size or greater in least dimension.

#### 1.4 ACTION SUBMITTALS

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

- B. Fastener Patterns: Full-size templates for fasteners in exposed framing.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
  - 1. Wood-preservative-treated wood.
  - 2. Fire-retardant-treated wood.
  - 3. Engineered wood products.
  - 4. Shear panels.
  - 5. Power-driven fasteners.
  - 6. Post-installed anchors.
  - 7. Metal framing anchors.

## 1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

## 1.7 DELIVERY, STORAGE, AND HANDLING

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

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

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

## 2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWWPA U1; Use Category UC2.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
  - 2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all rough carpentry unless otherwise indicated items indicated on Drawings, and the following:
  - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
  - 2. Wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with masonry or concrete.

## 2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
  - 1. Treatment shall not promote corrosion of metal fasteners.
  - 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
  - 3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
  - 4. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D 5664 and design value adjustment factors shall be calculated according to ASTM D 6841.
- C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.

- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
- E. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not bleed through, contain colorants, or otherwise adversely affect finishes.

#### 2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  - 1. Blocking.
  - 2. Nailers.
  - 3. Rooftop equipment bases and support curbs.
  - 4. Cants.
  - 5. Furring.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any of the following species:
  - 1. Hem-fir (north); NLGA.
  - 2. Mixed southern pine or southern pine; SPIB.
  - 3. Spruce-pine-fir; NLGA.
  - 4. Hem-fir; WCLIB or WWPA.
  - 5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
  - 6. Western woods; WCLIB or WWPA.
  - 7. Northern species; NLGA.
  - 8. Eastern softwoods; NeLMA.
- C. Concealed Boards: 19 percent maximum moisture content and any of the following species and grades:
  - 1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
  - 2. Hem-fir or hem-fir (north); Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.
  - 3. Spruce-pine-fir (south) or spruce-pine-fir; Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
  - 4. Eastern softwoods; No. 2 Common grade; NeLMA.
  - 5. Northern species; No. 2 Common grade; NLGA.
  - 6. Western woods; Construction or No. 2 Common grade; WCLIB or WWPA.
- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

## 2.5 PLYWOOD PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

## 2.6 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

- 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.

- B. Nails, Brads, and Staples: ASTM F 1667.

- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

- D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 as appropriate for the substrate.

- 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
  - 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

## 2.7 METAL FRAMING ANCHORS

- A. Allowable design loads, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

- 1. Use for interior locations unless otherwise indicated.

- C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.

- 1. Use for wood-preservative-treated lumber and where indicated.

- D. Stainless-Steel Sheet: ASTM A 666, Type 316.

- 1. Use for exterior locations and where indicated.



## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.
- D. Install shear wall panels to comply with manufacturer's written instructions.
- E. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- F. Install sill sealer gasket to form continuous seal between sill plates and foundation walls.
- G. Do not splice structural members between supports unless otherwise indicated.
- H. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
  - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- I. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
  - 1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
  - 2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.
  - 3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. and to solidly fill space below partitions.
  - 4. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet o.c.
- J. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with

function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

- K. Comply with AWP A M4 for applying field treatment to cut surfaces of preservative-treated lumber.
  - 1. Use inorganic boron for items that are continuously protected from liquid water.
  - 2. Use copper naphthenate for items not continuously protected from liquid water.
- L. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- M. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
  - 2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
  - 3. ICC-ES evaluation report for fastener.
- N. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.
- O. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.
  - 1. Comply with approved fastener patterns where applicable. Before fastening, mark fastener locations, using a template made of sheet metal, plastic, or cardboard.
  - 2. Use finishing nails unless otherwise indicated. Countersink nail heads and fill holes with wood filler.
  - 3. Use common nails unless otherwise indicated. Drive nails snug but do not countersink nail heads.

### 3.2 WOOD BLOCKING, AND NAILER INSTALLATION

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

### 3.3 WOOD FURRING INSTALLATION

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
- B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal-size furring vertically at 24 inches o.c.
- C. Furring to Receive Gypsum Board: Install 1-by-2-inch nominal-size furring vertically at 16 inches o.c.

### 3.4 PROTECTION

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

END OF SECTION 061000

## SECTION 072100 - THERMAL INSULATION

### 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. Extruded polystyrene foam-plastic board.
2. Molded polystyrene foam-plastic board.
3. Polyisocyanurate foam-plastic board.
4. Glass-Fiber Blanket
5. Sprayed-Applied Cellulosic Insulation

- B. Related Requirements:

1. Section 075500 Modified Bituminous Membrane Roofing for insulation specified as part of roofing construction.

#### 1.3 ACTION SUBMITTALS

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

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- B. Evaluation Reports: For foam-plastic insulation, from ICC-ES.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect foam-plastic board insulation as follows:
  1. Do not expose to sunlight except to necessary extent for period of installation and concealment.

2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.
3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

## PART 2 - PRODUCTS

### 2.1 EXTRUDED POLYSTYRENE FOAM-PLASTIC BOARD

- A. Extruded polystyrene boards in this article are also called "XPS boards." Roman numeral designators in ASTM C 578 are assigned in a fixed random sequence, and their numeric order does not reflect increasing strength or other characteristics.
- B. Extruded Polystyrene Board, Type IV: ASTM C 578, Type IV, 25-psi minimum compressive strength; unfaced; maximum flame-spread and smoke-developed indexes of 25 and 450, respectively, per ASTM E 84.
  1. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

### 2.2 MOLDED POLYSTYRENE FOAM-PLASTIC BOARD

- A. Molded Polystyrene Board, Type IX: ASTM C 578, Type IX, 25-psi minimum compressive strength.

### 2.3 POLYISOCYANURATE FOAM-PLASTIC BOARD

- A. Polyisocyanurate Board, Foil Faced: ASTM C 1289, foil faced, Type I, Class 1 or 2.
  1. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

### 2.4 GLASS-FIBER BLANKET

- A. Glass-Fiber Blanket, Polypropylene-Scrim-Kraft Faced: ASTM C 665, Type II (nonreflective faced), Class A (faced surface with a flame-spread index of 25 or less); Category 1 (membrane is a vapor barrier).

### 2.5 SPRAY-APPLIED CELLULOSIC INSULATION

- A. Self-Supported, Spray-Applied Cellulosic Insulation: ASTM C 1149, Type I (materials applied with liquid adhesive; suitable for either exposed or enclosed applications), chemically treated for flame-resistance, processing, and handling characteristics.

## 2.6 INSULATION FASTENERS

- A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.
1. Plate: Perforated, galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.
  2. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation.
- B. Adhesively Attached, Angle-Shaped, Spindle-Type Anchors: Angle welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.
1. Angle: Formed from 0.030-inch-thick, perforated, galvanized carbon-steel sheet with each leg 2 inches square.
  2. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation.
- C. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch-thick galvanized-steel sheet, with beveled edge for increased stiffness, sized as required to hold insulation securely in place, but not less than 1-1/2 inches square or in diameter.
1. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in the following locations:
    - a. Ceiling plenums.
    - b. Attic spaces.
- D. Insulation Standoff: Spacer fabricated from galvanized mild-steel sheet for fitting over spindle of insulation anchor to maintain air space of 1 inch between face of insulation and substrate to which anchor is attached.
- E. Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates without damaging insulation, fasteners, or substrates.

## 2.7 ACCESSORIES

- A. Insulation for Miscellaneous Voids:
1. Glass-Fiber Insulation: ASTM C 764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.
  2. Spray Polyurethane Foam Insulation: ASTM C 1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.
- B. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.

- C. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide ventilation between insulated attic spaces and vented eaves.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

### 3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

### 3.3 INSTALLATION OF CAVITY-WALL INSULATION

- A. Foam-Plastic Board Insulation: Install pads of adhesive spaced approximately 24 inches o.c. both ways on inside face and as recommended by manufacturer. Fit courses of insulation between wall ties and other obstructions, with edges butted tightly in both directions. Press units firmly against inside substrates.
  - 1. Supplement adhesive attachment of insulation by securing boards with two-piece wall ties designed for this purpose and specified in Section 042000 "Unit Masonry."

### 3.4 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

- A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
  - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
  - 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
  4. For metal-framed wall cavities where cavity heights exceed 96 inches, support un-faced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
- B. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
1. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft.
  2. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.
- C. Spray-Applied Cellulosic Insulation: Apply spray-applied insulation according to manufacturer's written instructions. Do not apply insulation until installation of pipes, ducts, conduits, wiring, and electrical outlets in walls is completed and windows, electrical boxes, and other items not indicated to receive insulation are masked. After insulation is applied, make flush with face of studs by using method recommended by insulation manufacturer.

### 3.5 INSTALLATION OF REFLECTIVE INSULATION

- A. Install sheet reflective insulation according to ASTM C 727.
- B. Install sheet radiant barriers according to ASTM C 1744.
- C. Install interior radiation control coating system according to ASTM C 1321.

### 3.6 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100



## SECTION 075500 – MODIFIED BITUMINOUS MEMBRANE ROOFING

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Hot Applied 3-Ply Asphalt Roofing (StressPly).
- B. Accessories.
- C. Edge Treatment and Roof Penetration Flashings.

#### 1.2 RELATED SECTIONS

- A. Section 053100 – Steel Decking.
- B. Section 061000 - Rough Carpentry.
- C. Section 061100- Wood Blocking and Curbing: Wood nailers and cant strips.
- D. Section 072100 – Thermal Insulation.
- E. Section 076200 - Sheet Metal Flashing and Trim.

#### 1.3 REFERENCES

- A. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
- B. ASTM D 312 - Standard Specification for Asphalt used in Roofing.
- C. ASTM D 451 - Standard Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products.
- D. ASTM D 1970 - Specification for Sheet Materials, Self-Adhering Polymer Modified Bituminous, Used as Steep Roofing Underlayment for Ice Dam Protection.
- E. ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.
- F. ASTM D 1863 Standard Specification for Mineral Aggregate Used as a Protective Coating for Roofing.
- G. ASTM D 2178 Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
- H. ASTM D 2824 Standard Specification for Aluminum-Pigmented Asphalt Roof Coating.
- I. ASTM D 4586 Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- J. ASTM D 4601 Standard Specification for Asphalt Coated Glass Fiber Base Sheet Used in Roofing.
- K. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet

Materials.

- L. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- M. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- N. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- O. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- P. Factory Mutual Research (FM): Roof Assembly Classifications.
- Q. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- R. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- S. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- T. Warnock Hersey (WH): Fire Hazard Classifications.
- U. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- V. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- W. UL - Fire Resistance Directory.
- X. FM Approvals - Roof Coverings and/or RoofNav assembly database.
- Y. Miami-Dade Building Code Compliance - N.O.A. (Notice of Acceptance).

#### 1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Perform work in accordance with all federal, state and local codes.
- B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
  - 1. Factory Mutual Class A Rating.
  - 2. Underwriters Laboratory Class A Rating.
  - 3. Warnock Hersey Class A Rating.
- A. Design Requirements:
  - 1. Uniform Wind Uplift Load Capacity
    - a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
      - 1) Design Code: ASCE 7-16, Method 2 for Components and Cladding.
      - 2) Importance Category:
        - a) II.
      - 3) Importance Factor of:

- a) 1.0
    - 4) Wind Speed: 125 mph
    - 5) Exposure Category:
      - a) D.
    - 6) Design Roof Height: 30 feet.
    - 7) Minimum Building Width: 450 feet.
    - 8) Roof Pitch: 0.25:12.
    - 9) Roof Area Design Uplift Pressure:
      - a) Zone 1 - Field of roof 74.3psf
      - b) Zone 1' - Center of roof 42.7 psf
      - c) Zone 2 - Eaves, ridges, hips and rakes 98 psf
      - d) Zone 3 - Corners 133.6 psf
  - 2. Live Load: 20 psf, or not to exceed original building design.
  - 3. Dead Load:
    - a. Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.
- B. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.
- C. Roof System membranes containing recycled or bio-based materials shall be third party certified through UL Environment.
- D. Roof system shall have been tested in compliance with the following codes and test requirements:
  - 1. Miami-Dade County:
    - a. Torch and Mop Membrane Systems Over
      - 1) Steel Decks N.O.A.
      - a) 16-0711.12
        - 1) PG# 25-26
    - b. Roofing Underlayments
      - 1) Garland Underlayments N.O.A.
    - c. Roofing Cements and Coatings
      - 1) Garland Coatings and Mastics N.O.A.
  - 2. Warnock Hersey
    - a. ITS Directory of Listed Products
      - 1) AC-23

## 1.5 SUBMITTALS

- A. Provide the following to the Owner at the time of bid submittal:
  - 1. Written certification from the roofing system manufacturer corporate officer certifying that the applicator is currently approved for installation of the specified roofing system.
  - 2. Descriptive product data including MSD sheets.
  - 3. Certification of Class A roof system.
  - 4. Sample copy of contractor's workmanship warranty.
  - 5. Sample copy of specified Manufacturer's warranty.
  - 6. Sample copy of Manufacturer's Architectural indemnification Agreement.
- B. Product Data: Submit brochures containing material samples, SDS, schedules, charts,

literature, and illustrations to indicate the performance, fabrication procedures, product variations, and accessories.

1. Within four (4) weeks of award of contract, submit:
  - a. Minimum of two (2) samples of each sheet material and descriptive literature.
  - b. Manufacturer's specifications and other independent test data according to ASTM designation D-5147-91 "Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material" needed to prove compliance with specified requirements.
  - c. All other data and information to satisfy requirements of manufacturer on warranty needs.
  - d. A written statement from the roofing materials manufacturers corporate officer approving the installer and stating the intent to guarantee the completed project as specified.
  - e. e. Samples of proposed warranty complete with any addenda necessary to meet the warranty requirements as specified.
  - f. f. Certified copy of ISO 9001 compliance.
- C. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane. Indicate size and materials. Show locations and installation procedures. Submit one electronic original prior to the job start and retain approved copies at the site.
- D. Materials: Modified Bitumen Manufacturer must also manufacturer all edge metal and standing seam radius panels. Private labeling of material will not be permitted.
- E. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7-98 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins. Report shall be signed and sealed by a Professional Engineer registered in the State of Florida who has provided roof system attachment analysis for not less than 5 consecutive years.
- F. Maintenance Procedures: Upon substantial completion of the project, deliver to Owner three (3) copies of manufacturers printed instructions regarding care and maintenance of the roof.
- G. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- H. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- I. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.
- J. Manufacturer's Fire Compliance Certificate: Certify that the roof system furnished is approved by Factory Mutual (FM), Underwriters Laboratories (UL), Warnock Hersey (WH) or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.

- K. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

#### 1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.
- D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
- E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
- F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

#### 1.7 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. Inspect and make notes of job conditions prior to installation:
  - 1. Record minutes of the conference and provide copies to all parties present.
  - 2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
  - 3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.
- D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.
- E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.
- F. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

## 1.9 COORDINATION

- A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

## 1.10 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.

## 1.11 WARRANTY

- A. Upon completion of the work, provide the Manufacturer's written and signed Edge-To-Edge NDL System Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installer, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition including Garland Metal Components.
  - 1. Warranty Period:
    - a. 30 years from date of acceptance.
- B. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
  - 1. Warranty Period:
    - a. 5 years from date of acceptance.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH 44105. ASD. Toll Free: 800-321-9336. Phone: 216-641-7500. Fax: 216-641-0633. Web Site: [www.garlandco.com](http://www.garlandco.com).
  - 1. Certaineed
  - 2. Derbigum
- B. Requests for substitutions will be considered in accordance with provisions of Section

012500.

- C. Alternate manufactures listed must meet or exceed all aspects of the basis of design.
- D. Request for substitutions must be submitted 7 days prior to the bid due date for approval.
- E. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
  - 1. Bidder will not be allowed to change materials after the bid opening date.
  - 2. If alternate products are included in the bid, the products must be equal to or exceed the products specified. Supporting technical data shall be submitted to the Architect/ Owner for approval prior to acceptance.
  - 3. In making a request for substitution, the Bidder/Roofing Contractor represents that it has:
    - a. Personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
    - b. Will provide the same guarantee for substitution as for the product and method specified.
    - c. Will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
    - d. Will waive all claims for additional cost related to substitution, which consequently become apparent.
    - e. Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the substitution.
    - f. Will reimburse the Owner for all redesign cost by the Architect for accommodation of the substitution.
  - 4. Architect/ Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that has met ALL specified requirement criteria.
  - 5. Failure to submit substitution package, or any portion thereof requested, will result in immediate disqualification and consideration for that particular contractors request for manufacturer substitution.
  - 6. Material substitution request must be submitted no later than 10 days prior to the bid submittal date for review.

## 2.2 HOT APPLIED 3-PLY ASPHALT ROOFING - STRESSPLY

- A. Nailable Base Sheet: One ply fastened to the deck per wind uplift calculations.
  - 1. HPR Tri-Base Premium.
- B. Base (Ply) Sheet: Two plies bonded to the prepared substrate with Interply Adhesive:
  - 1. HPR Glasfelt.
- C. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with interply Adhesive.
  - 1. StressPly Plus FR Mineral.
- D. Interply Adhesive: (1, 2 and 3)
  - 1. HPR All-Temp Asphalt.
- E. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive except for torch applied:

1. HPR Tri-Base Premium.
- F. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive except for torch applied:
  1. StressPly Plus FR Mineral.
- G. Flashing Ply Adhesive:
  1. HPR All-Temp Asphalt.

### 2.3 ACCESSORIES:

- A. Roof Insulation: In accordance with Section 07220.
  1. Insulation shall be in accordance with Miami Dade Notice of Acceptance.
  2. Top Layer Insulation only, ½” DensDeck Prime.
- B. Walkway Pads - Commercial Innovations Walkway Pads: As recommended and furnished by the membrane manufacturer set in approved adhesive to control foot traffic on roof top surface and provide a durable system compliant non-slip walkway.
- C. Sealant - Green-Lock Structural Adhesive: Single component, 100% solids structural adhesive as furnished and recommended by the membrane manufacturer.
  1. Elongation, ASTM D 412: 300%
  2. Hardness, Shore A, ASTM C 920: 50
  3. Shear Strength, ASTM D 1002: 300 psi
- D. Butyl Tape: 100% solids, asbestos free and compressive tape designed to seal as recommended and furnished by the membrane manufacturer.
- E. Non-Shrink Grout GarRock: All weather fast setting chemical action concrete material to fill pitch pans.
  1. Flexural Strength, ASTM C 78: (modified) 7 days 1100psi
  2. High Strength, ASTM C 109: (modified) 24 days 8400lbs (3810kg)
- F. Pitch Pocket Sealer - Seal-Tite: Two part, 100% solids, self-leveling, polyurethane sealant for filling pitch pans as recommended and furnished by the membrane manufacturer.
  1. Durometer, ASTM D 2240: 40-50 Shore
  2. Elongation, ASTM D 412: 250%
  3. Tensile Strength, ASTM D 412: 200 @ 100 mil
- G. Glass Fiber Cant - Glass Cant: Continuous triangular cross Section made of inorganic fibrous glass used as a cant strip as recommended and furnished by the membrane manufacturer.

### 2.4 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

- A. Pre-Manufactured Edge Metal Finishes:
  1. Exposed and unexposed surfaces for mill finish flashing, fascia, and coping cap, as shipped from the mill
  2. Exposed surfaces for coated panels:
    - a. Steel Finishes: fluorocarbon finish. Epoxy primer baked both sides, .2-.25 mils thickness as approved by finish coat manufacturer.  
Weathering finish as referred by National Coil Coaters Association (NCCA).  
Provided with the following properties.



- 1) Pencil Hardness: ASTM D3363, HB-H / NCCA II-2.
  - 2) Bend: ASTM D-4145, O-T / NCCA II-19
  - 3) Cross-Hatch Adhesion: ASTM D3359, no loss of adhesion
  - 4) Gloss (60 deg. angle): ASTM D523, 25+/-5%
  - 5) Reverse Bend: ASTM D2794, no cracking or loss of adhesion
  - 6) Nominal Thickness: ASTM D1005
    - a) Primer: 0.2 mils
    - b) Topcoat, 0.7 mils min
    - c) Clear Coat (optional, only used with 22 ga. steel) 0.3 mils
  - 7) Color: Provide as specified. (Subject to minimum quantities)
- B. Vents and Breathers: Heavy gauge aluminum and fully insulated vent that allows moisture and air to escape but not enter the roof system as recommended and furnished by the membrane manufacturer.
- C. Pitch pans, Rain Collar 24 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.
- D. Drain Flashings should be 4lb (1.8kg) sheet lead formed and rolled.
- E. Plumbing stacks should be 4lb (1.8kg) sheet lead formed and rolled.
- F. Liquid Flashing - Tuff-Flash: An asphaltic-polyurethane, low odor, liquid flashing material designed for specialized details unable to be waterproofed with typical modified membrane flashings.
  1. Tensile Strength, ASTM D 412: 400 psi
  2. Elongation, ASTM D 412: 300%
  3. Density @77 deg. F 8.5 lb/gal typical
- G. Fabricated Flashings: Fabricated flashings and trim are specified in Section 07620.
  1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.
- H. Manufactured Roof Specialties: Shop fabricated copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are specified in Section 07710.
  1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.
- C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

- D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. General: Clean surfaces thoroughly prior to installation.
  - 1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
  - 2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
  - 3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
  - 4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
  - 5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
  - 6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
  - 7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.
- B. Metal Deck: Metal deck shall be installed as specified in Section
  - 1. Fastening of the deck should comply with the anticipated live and dead loads pertaining to the building as well as applicable Code.
  - 2. Steel decks shall be minimum 22-gauge factory galvanized or zinc alloy coated for protection against corrosion.
  - 3. Suitable insulation shall be mechanically attached as recommended by the insulation manufacturer.
  - 4. Decks shall comply with the gauge and span requirements in the current Factory Mutual FM Approval Guide and be installed in accordance with Loss Prevention Data Sheet 1-28 or specific FM approval.
  - 5. When re-roofing over steel decks, surface corrosion shall be removed, and repairs to severely corroded areas made. Loose or inadequately secured decking shall be fastened, and irreparable or otherwise defective decking shall be replaced.

### 3.3 INSTALLATION - GENERAL

- A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.
- B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
  - 1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
  - 2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at

the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.

- C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water
- D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

### 3.4 INSTALLATION HOT APPLIED ROOF SYSTEM

- A. Base/Felt Ply(s): Install base sheet or felt plies in twenty five (25) lbs (11.3kg) per square of bitumen shingled uniformly to achieve one or more plies over the entire prepared substrate. Shingle in direction of slope of roof to shed water on each area of roof. Do not step on base rolls until asphalt has cooled, fish mouths should be cut and patched.
  - 1. Lap ply sheet ends 8 inches (203 mm). Stagger end laps 2 inches (304mm) minimum.
  - 2. Install base flashing ply to all perimeter and projection details after membrane application.
  - 3. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
  - 4. Install base flashing ply to all perimeter and projection details.
  - 5. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.
- B. Modified Cap Ply(s): Solidly bond the modified membrane to the base layers with specified material at the rate of 25 to thirty 30 lbs. (11-13kg) per 100 square feet.
  - 1. Roll must push a puddle of hot material in front of it with material slightly visible at all side laps. Use care to eliminate air entrapment under the membrane. Exercise care during application to eliminate air entrapment under the membrane.
  - 2. Apply pressure to all seams to ensure that the laps are solidly bonded to substrate.
  - 3. Install subsequent rolls of modified membrane as above with a minimum of 4 inch (101 mm) side laps and 8 inch (203 mm) end laps. Stagger end laps. Apply membrane in the same direction as the previous layers but stagger the laps so they do not coincide with the laps of the base layers.
  - 4. Apply hot material no more than 5 feet (1.5 m) ahead of each roll being embedded.
  - 5. Extend membrane 2 inches (50 mm) beyond top edge of all cants in full moppings of the specified hot material.
- C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.
- D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 061140.
  - 1. Provide nailers at all roof perimeters and penetrations for fastening membrane

- flashings and sheet metal components.
2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
  3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
  4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.
- E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620 or Section 07710. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- F. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.
- G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
  2. Prepare all walls, penetrations, expansion joints and surfaces to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
  3. Adhere to the underlying base flashing ply with specified hot material unless otherwise noted in these specifications. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
  4. Solidly adhere the entire sheet of flashing membrane to the substrate.
  5. Seal all vertical laps of flashing membrane with a three-course application of trowel-grade mastic and mesh.
  6. Coordinate counter flashing, cap flashings, expansion joints, and similar work with modified bitumen roofing work as specified.
  7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
- H. Flashing Cap Ply: Install flashing cap sheets by the same application method used for the cap ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
  2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
  3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
  4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
  5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.

6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

I. Roof Walkways: Provide walkways in areas indicated on the Drawings.

### 3.5 INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

- A. Fabricated Flashings: Fabricated flashings and trim are provided as specified in Section 076200.
1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the Copper Development Association "Copper in Architecture - Handbook" as applicable.
- B. Metal Edge:
1. Inspect the nailers to assure proper attachment and configuration.
  2. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
  3. Install continuous cleat and fasten at 6 inches (152 mm) o.c.
  4. Install new metal edge hooked to continuous cleat and set in bed of roof cement. Fasten flange to wood nailers every 3 inches (76 mm) o.c. staggered.
  5. Prime metal edge at a rate of 100 square feet per gallon and allow to dry. Do not prime for Green-Lock System lightly sand metal to improve bond.
  6. Strip in flange with base flashing ply covering entire flange in bitumen with 6 inches (152 mm) on to the field of roof. Assure ply laps do not coincide with metal laps.
  7. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Seal outside edge with rubberized cement.
- C. Roof Edge With Gutter:
1. Inspect the nailer to assure proper attachment and configuration. Increase slope at metal edge by additional degree of slope in first board.
  2. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
  3. Install gutter and strapping.
  4. Install continuous cleat and fasten at 6 inches (152 mm) o.c.
  5. Install new metal edge hooked to continuous cleat and set in bed of roof cement. Fasten flange to wood nailer every 3 inches (76 mm) o.c. staggered.
  6. Prime metal edge at a rate of 100 square feet per gallon and allow to dry. Do not prime for Green-Lock System lightly sand metal to improve bond.
  7. Strip in flange with base flashing ply covering entire flange in bitumen with 6 inches (152 mm) onto the field of the roof. Assure ply laps do not coincide with metal laps.
  8. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof.
- D. Surface Mounted Counterflashing:
1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
  2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).

3. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.
  4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
  5. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
  6. Secure counterflashing set on butyl tape above flashing at 8 inches (203 mm) o.c. and caulk top of counterflashing.
- E. Expansion Joint:
1. Minimum curb height is 8 inches (203 mm) above finished roof height. Chamfer top of curb. Prime vertical curb at a rate of 100 square feet per gallon and allow to dry.
  2. Mechanically attach wood cant to expansion joint nailers. Run all field plies over cant a minimum of 2 inches (50 mm).
  3. Install compressible insulation in neoprene cradle.
  4. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
  5. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
  6. Install pre-manufactured expansion joint cover. Fasten sides at 12 inches (609 mm) o.c. with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape between metal covers.
- F. Curb Detail/Air Handling Station:
1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
  2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
  3. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
  4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
  5. Install pre-manufactured counterflashing with fasteners and neoprene washers or per manufacturer's recommendations.
  6. Set equipment on neoprene pad and fasten as required by equipment manufacturer.
- G. Plumbing Stack:
1. Minimum stack height is 12 inches (609 mm).
  2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
  3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
  4. Install base flashing ply in bitumen.
  5. Install membrane in bitumen.
  6. Caulk the intersection of the membrane with elastomeric sealant.
  7. Turn sleeve a minimum of 1 inch (25 mm) down inside of stack.

### 3.6 CLEANING

- A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- B. Remove asphalt markings from finished surfaces.
- C. Repair or replace defaced or disfigured finishes caused by Work of this section.

### 3.7 PROTECTION

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.
- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

### 3.8 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations at a minimum of three times per week, while the job is in progress. Provide a final inspection upon completion of the Work.
  - 1. Warranty shall be issued upon manufacturer's acceptance of the installation.
  - 2. Field observations shall be performed by a Sales Representative employed full-time for a minimum of 5 years by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
  - 3. Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
  - 4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

### 3.9 SCHEDULES

- A. Base (Ply) Sheet:
  - 1. HPR Glasfelt: ASTM D 2178 Type IV, Asphalt saturated fiberglass felt.
    - a. Meets or Exceeds ASTM D 2178 Type IV Performance Criteria.
- B. Thermoplastic/Modified Cap (Ply) Sheet:
  - 1. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
    - a. Tensile Strength, ASTM D 5147
      - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
      - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
    - b. Tear Strength, ASTM D 5147
      - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
      - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N

- c. Elongation at Maximum Tensile, ASTM D 5147
    - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
    - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
  - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)
- C. Interply Adhesive:
- 1. HPR All-Temp Asphalt: Hot Bitumen, high penetration, high softening point mopping asphalt having the following characteristics:
    - a. Softening Point 225 deg. F - 235 deg. F
    - b. Flash Point 525 deg. F
    - c. Penetration @ 77 deg. F 16-20 units
    - d. Ductility @ 77 deg. F 1.5-2.0 cm
- D. Flashing Base Ply:
- 1. HPR Tri-Base Premium: 60 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass and polyester composite scrim, performance requirements according to ASTM D 5147.
    - a. Tensile Strength, ASTM D 5147:
      - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F: MD 330 lbf/in XD 330 lbf/in
      - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 57.5 kN/m XD 57.5 kN/m
    - b. Tear Strength, ASTM D5147:
      - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 550 lbf XD 550 lbf
      - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 2446 N XD 2446 N
    - c. Elongation at Maximum Tensile, ASTM D 5147:
      - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7% XD 9%
      - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 7% XD 9%
- E. Flashing Ply Adhesive:
- 1. HPR All-Temp Asphalt: Hot Bitumen, high penetration, high softening point mopping asphalt having the following characteristics:
    - a. Softening Point 225 deg. F - 235 deg. F
    - b. Flash Point 525 deg. F
    - c. Penetration @ 77 deg. F 16-20 units
    - d. Ductility @ 77 deg. F 1.5-2.0 cm
- F. Surfacing:
- 1. Flashing Cap (Ply) Sheet:
    - a. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
      - 1) Tensile Strength, ASTM D 5147
        - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
        - b) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
      - 2) Tear Strength, ASTM D 5147
        - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
        - b) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
      - 3) Elongation at Maximum Tensile, ASTM D 5147
        - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
        - b) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
      - 4) Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)



END OF SECTION

## SECTION 075500A - MODIFIED BITUMINOUS MEMBRANE ROOFING 40 YEAR ALTERNATE

## PART 1 GENERAL

## 1.1 SECTION INCLUDES

- A. Hot Applied 2-Ply Asphalt Roofing (OptiMax).
- B. Accessories. (2.19)
- C. Edge Treatment and Roof Penetration Flashings.

## 1.2 RELATED SECTIONS

- A. Section 053100 - Metal Roof Deck.
- B. Section 061000 - Rough Carpentry.
- C. Section 072100 – Thermal Insulation Board:
- D. Section 076200 - Sheet Metal Flashing and Trim.

## 1.3 REFERENCES

- A. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
- B. ASTM D 312 - Standard Specification for Asphalt used in Roofing.
- C. ASTM D 451 - Standard Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products.
- D. ASTM D 1970 - Specification for Sheet Materials, Self-Adhering Polymer Modified Bituminous, Used as Steep Roofing Underlayment for Ice Dam Protection.
- E. ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.
- F. ASTM D 4586 Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- G. ASTM D 4601 Standard Specification for Asphalt Coated Glass Fiber Base Sheet Used in Roofing.
- H. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.
- I. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- J. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- K. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- L. ASTM D 6757 - Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing.
- M. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings

- N. Factory Mutual Research (FM): Roof Assembly Classifications.
- O. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- P. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- Q. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- R. Warnock Hersey (WH): Fire Hazard Classifications.
- S. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- T. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- U. UL - Fire Resistance Directory.
- V. FM Approvals - Roof Coverings and/or RoofNav assembly database.
- W. Miami-Dade Building Code Compliance - N.O.A. (Notice of Acceptance).

#### 1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Perform work in accordance with all federal, state and local codes.
- B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
  - 1. Factory Mutual Class A Rating.
  - 2. Warnock Hersey Class A Rating.
- C. Design Requirements:
  - 1. Uniform Wind Uplift Load Capacity
    - a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
      - 1) Design Code: ASCE 7-16, Method 2 for Components and Cladding.
      - 2) Importance Category:
        - a) II.
      - 3) Importance Factor of:
        - a) 1.0
      - 4) Wind Speed: 125 mph
      - 5) Exposure Category:
        - a) D.
      - 6) Design Roof Height: 30 feet.
      - 7) Minimum Building Width: 450 feet.
      - 8) Roof Pitch: 0.25:12.
      - 9) Roof Area Design Uplift Pressure:
        - a) Zone 1 - Field of roof 74.3psf
        - b) Zone 1' - Center of roof 42.7 psf
        - c) Zone 2 - Eaves, ridges, hips and rakes 98 psf
        - d) Zone 3 - Corners 133.6 psf
  - 2. Live Load: 20 psf, or not to exceed original building design.
  - 3. Dead Load:
    - a. Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.
- D. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.

- E. Roof System membranes containing recycled or bio-based materials shall be third party certified through UL Environment.
- F. Roof system shall have been tested in compliance with the following codes and test requirements:
  - 1. Miami-Dade County:
    - a. Torch and Mop Membrane Systems Over
      - 1) Steel Decks N.O.A.
        - a) #16-0711.12
          - 1) PG# 20-21
    - b. Roofing Underlayments
      - 1) Garland Underlayments N.O.A.
    - c. Roofing Cements and Coatings
      - 1) Garland Coatings and Mastics N.O.A.
  - 2. Warnock Hersey
    - a. ITS Directory of Listed Products
  - 3. FM Approvals:
    - a. RoofNav Website
      - 1) 234034-388071-0

### 1.5 SUBMITTALS

- A. Provide the following to the Owner at the time of bid submittal:
  - 1. Written certification from the roofing system manufacturer corporate officer certifying that the applicator is currently approved for installation of the specified roofing system.
  - 2. Descriptive product data including MSD sheets.
  - 3. Certification of Class A roof system.
  - 4. Sample copy of contractor's workmanship warranty.
  - 5. Sample copy of specified Manufacturer's warranty.
  - 6. Sample copy of Manufacturer's Architectural indemnification Agreement.
- B. Product Data: Submit brochures containing material samples, SDS, schedules, charts, literature, and illustrations to indicate the performance, fabrication procedures, product variations, and accessories.
  - 1. Within four (4) weeks of award of contract, submit:
    - a. Minimum of two (2) samples of each sheet material and descriptive literature.
    - b. Manufacturer's specifications and other independent test data according to ASTM designation D-5147-91 "Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material" needed to prove compliance with specified requirements.
    - c. All other data and information to satisfy requirements of manufacturer on warranty needs.
    - d. A written statement from the roofing materials manufacturers corporate officer approving the installer and stating the intent to guarantee the completed project as specified.
    - e. Samples of proposed warranty complete with any addenda necessary to meet the warranty requirements as specified.
    - f. Certified copy of ISO 9001 compliance.
- C. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane. Indicate size and materials. Show locations and installation procedures. Submit one electronic original prior to the job start and retain approved copies at the site.
- D. Materials: Modified Bitumen Manufacturer must also manufacturer all edge metal and standing seam radius panels. Private labeling of material will not be permitted.
- E. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7-98 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work

begins. Report shall be signed and sealed by a Professional Engineer registered in the State of Florida who has provided roof system attachment analysis for not less than 5 consecutive years.

- F. Maintenance Procedures: Upon substantial completion of the project, deliver to Owner three (3) copies of manufacturers printed instructions regarding care and maintenance of the roof.
- G. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- H. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- I. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.
- J. Manufacturer's Fire Compliance Certificate: Certify that the roof system furnished is approved by Factory Mutual (FM), Underwriters Laboratories (UL), Warnock Hersey (WH) or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
- K. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

#### 1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.
- D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
- E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
- F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

#### 1.7 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. Inspect and make notes of job conditions prior to installation:
  - 1. Record minutes of the conference and provide copies to all parties present.
  - 2. Identify all outstanding issues in writing designating the responsible party for follow-up action

- and the timetable for completion.
3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.
- D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.
- E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.
- F. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

#### 1.9 COORDINATION

- A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

#### 1.10 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.

#### 1.11 WARRANTY

- A. Upon completion of the work, provide the Manufacturer's written and signed Edge-To-Edge NDL System Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installer, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition including Garland Metal Components.
  1. Warranty Period:
    - a. 40 years from date of acceptance.
- B. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
  1. Warranty Period:
    - a. 5 years from date of acceptance.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH 44105. ASD. Toll Free: 800-321-9336. Phone: 216-641-7500. Fax: 216-641-0633. Web Site:

www.garlandco.com.

- B. Requests for substitutions will be considered in accordance with provisions of Section 012500.
- C. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
  - 1. Bidder will not be allowed to change materials after the bid opening date.
  - 2. If alternate products are included in the bid, the products must be equal to or exceed the products specified. Supporting technical data shall be submitted to the Architect/ Owner for approval prior to acceptance.
  - 3. In making a request for substitution, the Bidder/Roofing Contractor represents that it has:
    - a. Personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
    - b. Will provide the same guarantee for substitution as for the product and method specified.
    - c. Will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
    - d. Will waive all claims for additional cost related to substitution, which consequently become apparent.
    - e. Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the substitution.
    - f. Will reimburse the Owner for all redesign cost by the Architect for accommodation of the substitution.
  - 4. Architect/ Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that has met ALL specified requirement criteria.
  - 5. Failure to submit substitution package, or any portion thereof requested, will result in immediate disqualification and consideration for that particular contractors request for manufacturer substitution.
  - 6. Material substitution request must be submitted no later than 10 days prior to the bid submittal date for review.

## 2.2 HOT APPLIED 2-PLY ASPHALT ROOFING - STRESSPLY, OPTIMAX, OR VERSIPLY

- A. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
  - 1. StressBase 80:
- B. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive.
  - 1. OptiMax FR Mineral:
- C. Interply Adhesive: (1 and 2)
  - 1. HPR All-Temp Asphalt:
- D. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive: except torch sheet.
  - 1. StressBase 80:
- E. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive: except torch sheet.
  - 1. OptiMax FR Mineral:
- F. Flashing Ply Adhesive:
  - 1. HPR All-Temp Asphalt:

## 2.3 ACCESSORIES:

- A. Roof Insulation: In accordance with Section 072100.
  - 1. Insulation shall be in compliance with Miami Dade Notice of Acceptance.
- B. Nails and Fasteners: Non-ferrous metal or galvanized steel, except that hard copper nails shall be used with copper; aluminum or stainless steel nails shall be used with aluminum; and stainless steel nails shall be used with stainless steel. Fasteners shall be self-clinching type of penetrating type as recommended by the deck manufacturer. Fasten nails and fasteners flush-driven through flat metal discs not less than 1 inch (25 mm) diameter. Omit metal discs when one-piece composite nails or fasteners with heads not less than 1 inch (25 mm) diameter are used.
- C. Walkway Pads - Commercial Innovations Walkway Pads: As recommended and furnished by the membrane manufacturer set in approved adhesive to control foot traffic on roof top surface and provide a durable system compliant non-slip walkway.
- D. Sealant - Green-Lock Structural Adhesive: Single component, 100% solids structural adhesive as furnished and recommended by the membrane manufacturer.
  - 1. Elongation, ASTM D 412: 300%
  - 2. Hardness, Shore A, ASTM C 920: 50
  - 3. Shear Strength, ASTM D 1002: 300 psi
- E. Non-Shrink Grout GarRock: All weather fast setting chemical action concrete material to fill pitch pans.
  - 1. Flexural Strength, ASTM C 78: (modified) 7 days 1100psi
  - 2. High Strength, ASTM C 109: (modified) 24 days 8400lbs (3810kg)
- F. Pitch Pocket Sealer - Seal-Tite: Two part, 100% solids, self-leveling, polyurethane sealant for filling pitch pans as recommended and furnished by the membrane manufacturer.
  - 1. Durometer, ASTM D 2240: 40-50 Shore
  - 2. Elongation, ASTM D 412: 250%
  - 3. Tensile Strength, ASTM D 412: 200 @ 100 mil
- G. Glass Fiber Cant - Glass Cant: Continuous triangular cross Section made of inorganic fibrous glass used as a cant strip as recommended and furnished by the membrane manufacturer.

## 2.4 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

- A. Edge Metal Finishes:
  - 1. Exposed and unexposed surfaces for mill finish flashing, fascia, and coping cap, as shipped from the mill
  - 2. Exposed surfaces for coated panels:
    - a. Steel Finishes: fluorocarbon finish. Epoxy primer baked both sides, .2-.25 mils thickness as approved by finish coat manufacturer. Weathering finish as referred by National Coil Coaters Association (NCCA). Provided with the following properties.
      - 1) Pencil Hardness: ASTM D3363, HB-H / NCCA II-2.
      - 2) Bend: ASTM D-4145, O-T / NCCA II-19
      - 3) Cross-Hatch Adhesion: ASTM D3359, no loss of adhesion
      - 4) Gloss (60 deg. angle): ASTM D523, 25+/-5%
      - 5) Reverse Bend: ASTM D2794, no cracking or loss of adhesion
      - 6) Nominal Thickness: ASTM D1005
        - a) Primer: 0.2 mils
        - b) Topcoat, 0.7 mils min
        - c) Clear Coat (optional, only used with 22 ga. steel) 0.3 mils
      - 7) Color: Provide as specified. (Subject to minimum quantities)



- B. Vents and Breathers: Heavy gauge aluminum and fully insulated vent that allows moisture and air to escape but not enter the roof system as recommended and furnished by the membrane manufacturer.
- C. Pitch pans, Rain Collar 24 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.
- D. Plumbing stacks should be 4lb (1.8kg) sheet lead formed and rolled.
- E. Liquid Flashing - Tuff-Flash: An asphaltic-polyurethane, low odor, liquid flashing material designed for specialized details unable to be waterproofed with typical modified membrane flashings.
  - 1. Tensile Strength, ASTM D 412: 400 psi
  - 2. Elongation, ASTM D 412: 300%
  - 3. Density @77 deg. F 8.5 lb/gal typical
- F. Fabricated Flashings: Fabricated flashings and trim are specified in Section 076200.
  - 1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.
- G. Manufactured Roof Specialties: Shop fabricated copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are specified in Section 077129.
  - 1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.
- C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. General: Clean surfaces thoroughly prior to installation.
  - 1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
  - 2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
  - 3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
  - 4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
  - 5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
  - 6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
  - 7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

- B. Metal Deck: Metal deck shall be installed as specified in Section
1. Fastening of the deck should comply with the anticipated live and dead loads pertaining to the building as well as applicable Code.
  2. Steel decks shall be minimum 22-gauge factory galvanized or zinc alloy coated for protection against corrosion.
  3. Suitable insulation shall be mechanically attached as recommended by the insulation manufacturer.
  4. Decks shall comply with the gauge and span requirements in the current Factory Mutual FM Approval Guide and be installed in accordance with Loss Prevention Data Sheet 1-28 or specific FM approval.
  5. When re-roofing over steel decks, surface corrosion shall be removed, and repairs to severely corroded areas made. Loose or inadequately secured decking shall be fastened, and irreparable or otherwise defective decking shall be replaced.

### 3.3 INSTALLATION - GENERAL

- A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.
- B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
  2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.
- C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water
- D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

### 3.4 INSTALLATION HOT APPLIED ROOF SYSTEM

- A. Base/Felt Ply(s): Install base sheet or felt plies in twenty five (25) lbs (11.3kg) per square of bitumen shingled uniformly to achieve one or more plies over the entire prepared substrate. Shingle in direction of slope of roof to shed water on each area of roof. Do not step on base rolls until asphalt has cooled, fish mouths should be cut and patched.
1. Lap ply sheet ends 8 inches (203 mm). Stagger end laps 2 inches (304mm) minimum.
  2. Install base flashing ply to all perimeter and projection details after membrane application.
  3. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
  4. Install base flashing ply to all perimeter and projection details.
  5. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.
- B. Modified Cap Ply(s): Solidly bond the modified membrane to the base layers with specified material

- at the rate of 25 to thirty 30 lbs. (11-13kg) per 100 square feet.
1. Roll must push a puddle of hot material in front of it with material slightly visible at all side laps. Use care to eliminate air entrapment under the membrane. Exercise care during application to eliminate air entrapment under the membrane.
  2. Apply pressure to all seams to ensure that the laps are solidly bonded to substrate.
  3. Install subsequent rolls of modified membrane as above with a minimum of 4 inch (101 mm) side laps and 8 inch (203 mm) end laps. Stagger end laps. Apply membrane in the same direction as the previous layers but stagger the laps so they do not coincide with the laps of the base layers.
  4. Apply hot material no more than 5 feet (1.5 m) ahead of each roll being embedded.
  5. Extend membrane 2 inches (50 mm) beyond top edge of all cants in full moppings of the specified hot material.
- C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.
- D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 061000.
1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
  2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
  3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
  4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.
- E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 076200 or Section 077200. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- F. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.
- G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
  2. Prepare all walls, penetrations, expansion joints and surfaces to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
  3. Adhere to the underlying base flashing ply with specified hot material unless otherwise noted in these specifications. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
  4. Solidly adhere the entire sheet of flashing membrane to the substrate.
  5. Seal all vertical laps of flashing membrane with a three-course application of trowel-grade mastic and mesh.
  6. Coordinate counter flashing, cap flashings, expansion joints, and similar work with modified bitumen roofing work as specified.
  7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
- H. Flashing Cap Ply: Install flashing cap sheets by the same application method used for the cap ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the

roof or flashing membrane.

2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

I. Roof Walkways: Provide walkways in areas indicated on the Drawings.

### 3.5 INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

- A. Fabricated Flashings: Fabricated flashings and trim are provided as specified in Section 07620.
1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the Copper Development Association "Copper in Architecture - Handbook" as applicable.
- B. Metal Edge:
1. Inspect the nailers to assure proper attachment and configuration.
  2. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
  3. Install continuous cleat and fasten at 6 inches (152 mm) o.c.
  4. Install new metal edge hooked to continuous cleat and set in bed of roof cement. Fasten flange to wood nailers every 3 inches (76 mm) o.c. staggered.
  5. Prime metal edge at a rate of 100 square feet per gallon and allow to dry. Do not prime for Green-Lock System lightly sand metal to improve bond.
  6. Strip in flange with base flashing ply covering entire flange in bitumen with 6 inches (152 mm) on to the field of roof. Assure ply laps do not coincide with metal laps.
  7. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Seal outside edge with rubberized cement.
- C. Expansion Joint:
1. Minimum curb height is 8 inches (203 mm) above finished roof height. Chamfer top of curb. Prime vertical curb at a rate of 100 square feet per gallon and allow to dry.
  2. Mechanically attach wood cant to expansion joint nailers. Run all field plies over cant a minimum of 2 inches (50 mm).
  3. Install compressible insulation in neoprene cradle.
  4. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
  5. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
  6. Install pre-manufactured expansion joint cover. Fasten sides at 12 inches (609 mm) o.c. with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape between metal covers.

- D. Passive Vent/Air Intake:
1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
  2. Set cant in bitumen. Run all plies over cant a minimum of 2 inches (50 mm).
  3. Install base flashing ply covering curb with 6 inches (152mm) on to the field of the roof.
  4. Install a second ply of modified flashing ply installed over the base flashing ply, 9 inches (228 mm) on to field of the roof. Attach top of membrane to top of wood curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
  5. Install passive vent/air intake over the wood nailers and flashing to act as counterflashing. Fasten per manufacturer's recommendations.
- E. Plumbing Stack:
1. Minimum stack height is 12 inches (609 mm).
  2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
  3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
  4. Install base flashing ply in bitumen.
  5. Install membrane in bitumen.
  6. Caulk the intersection of the membrane with elastomeric sealant.
  7. Turn sleeve a minimum of 1 inch (25 mm) down inside of stack.

### 3.6 CLEANING

- A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- B. Remove asphalt markings from finished surfaces.
- C. Repair or replace defaced or disfigured finishes caused by Work of this section.

### 3.7 PROTECTION

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.
- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

### 3.8 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations at a minimum of three times per week, while the job is in progress. Provide a final inspection upon completion of the Work.
1. Warranty shall be issued upon manufacturer's acceptance of the installation.
  2. Field observations shall be performed by a Sales Representative employed full-time for a minimum of 5 years by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
  3. Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.

4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

### 3.9 SCHEDULES

#### A. Base (Ply) Sheet:

1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
  - a. Tensile Strength, ASTM D 5147
    - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
    - 2) 50mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
  - b. Tear Strength, ASTM D 5147
    - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
    - 2) 50mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
  - c. Elongation at Maximum Tensile, ASTM D 5147
    - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
    - 2) 50mm/min @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
  - d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

#### B. Thermoplastic/Modified Cap (Ply) Sheet:

1. OptiMax FR Mineral: 145 mil mineral surfaced, polyurethane modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
  - a. Tensile Strength, ASTM D 5147
    - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 205 lbf/in XD 215 lbf/in
    - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.0 kN/m XD 38 kN/m
  - b. Tear Strength, ASTM D 5147
    - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
    - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 1334 N XD 1334 N
  - c. Elongation at Maximum Tensile, ASTM D 5147
    - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.7% XD 5.0%
    - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.7% XD 5.0%
  - d. Low Temperature Flexibility, ASTM D 5147, Passes 0 deg. F (-18 deg. C)

#### C. Interply Adhesive:

1. HPR All-Temp Asphalt: Hot Bitumen, high penetration, high softening point mopping asphalt having the following characteristics:
  - a. Softening Point 225 deg. F - 235 deg. F
  - b. Flash Point 525 deg. F
  - c. Penetration @ 77 deg. F 16-20 units
  - d. Ductility @ 77 deg. F 1.5-2.0 cm

#### D. Flashing Base Ply:

1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
  - a. Tensile Strength, ASTM D 5147
    - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
    - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
  - b. Tear Strength, ASTM D 5147
    - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
    - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
  - c. Elongation at Maximum Tensile, ASTM D 5147
    - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
    - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
  - d. Low Temperature Flexibility, ASTM D 5147
    - 1) Passes -40 deg. F (-40 deg. C)

- E. Flashing Ply Adhesive:
1. HPR All-Temp Asphalt: Hot Bitumen, high penetration, high softening point mopping asphalt having the following characteristics:
    - a. Softening Point 225 deg. F - 235 deg. F
    - b. Flash Point 525 deg. F
    - c. Penetration @ 77 deg. F 16-20 units
    - d. Ductility @ 77 deg. F 1.5-2.0 cm
- F. Surfacing:
1. Flashing Cap (Ply) Sheet:
    - a. OptiMax FR Mineral: 145 mil mineral surfaced, polyurethane modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
      - 1) Tensile Strength, ASTM D 5147
        - a) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 205 lbf/in XD 215 lbf/in
        - b) 50 mm/min. @ 23 +/- 2 deg. C MD 36.0 kN/m XD 39 kN/m
      - 2) Tear Strength, ASTM D 5147
        - a) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
        - b) 50 mm/min. @ 23 +/- 2 deg. C MD 1334 N XD 1334 N
      - 3) Elongation at Maximum Tensile, ASTM D 5147
        - a) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 4.7% XD 5.0%
        - b) 50 mm/min. @ 23 +/- 2 deg. C MD 4.7% XD 5.0%
      - 4) Low Temperature Flexibility, ASTM D 5147, Passes 0 deg. F (-18 deg. C)

END OF SECTION

## SECTION 076200 - SHEET METAL FLASHING AND TRIM

### 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. Manufactured reglets.
2. Formed roof-drainage sheet metal fabrications.
3. Formed low-slope roof sheet metal fabrications.
4. Formed steep-slope roof sheet metal fabrications.
5. Formed wall sheet metal fabrications.
6. Formed equipment support flashing.

- B. Related Requirements:

1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 077200 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.

#### 1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

#### 1.4 PREINSTALLATION MEETINGS

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

1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review special roof details, roof drainage, roof-penetration flashing, equipment curbs, and condition of other construction that affect sheet metal flashing and trim.
3. Review requirements for insurance and certificates if applicable.
4. Review sheet metal flashing observation and repair procedures after flashing installation.



## 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.
- B. Shop Drawings: For sheet metal flashing and trim.
  - 1. Include plans, elevations, sections, and attachment details.
  - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.
  - 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
  - 4. Include details for forming, including profiles, shapes, seams, and dimensions.
  - 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
  - 6. Include details of termination points and assemblies.
  - 7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
  - 8. Include details of roof-penetration flashing.
  - 9. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counter-flashings as applicable.
  - 10. Include details of special conditions.
  - 11. Include details of connections to adjoining work.
  - 12. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches.
- C. Samples for Initial Selection: For each type of sheet metal and accessory indicated with factory-applied finishes.
- D. Samples for Verification: For each type of exposed finish.
  - 1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
  - 2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
  - 3. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.
  - 4. Anodized Aluminum Samples: Samples to show full range to be expected for each color required.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Product Certificates: For each type of coping and roof edge flashing that is SPRI ES-1 tested and FM Approvals approved.
- C. Product Test Reports: For each product, for tests performed by a qualified testing agency.

- D. Sample Warranty: For special warranty.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

#### 1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
  - 1. For copings and roof edge flashings that are SPRI ES-1 tested and FM Approvals approved, shop shall be listed as able to fabricate required details as tested and approved.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

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

#### 1.10 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to

defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressure:
  - 1. Design Pressure: As indicated on Drawings.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

## 2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet according to ASTM A 653/A 653M, G90 coating designation; pre-painted by coil-coating process to comply with ASTM A 755/A 755M.
  - 1. Surface: Smooth, flat and mill phosphatized for field painting and with manufacturer's standard clear acrylic coating on both sides.
  - 2. Exposed Coil-Coated Finish:
    - a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - 3. Color: As selected by Architect from manufacturer's full range.
  - 4. Concealed Finish: Pre-treat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

## 2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.
- B. Synthetic Underlayment: Laminated or reinforced, woven polyethylene or polypropylene, synthetic roofing underlayment; bitumen free; slip resistant; suitable for high temperatures over 220 deg F; and complying with physical requirements of ASTM D 226/D 226M for Type I and Type II felts.

- C. Self-Adhering, High-Temperature Sheet: Minimum 30 mils thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.
  - 1. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F or higher.
  - 2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F or lower.
- D. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

#### 2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
  - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
    - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
    - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
    - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, non-staining tape 1/2 inch wide and 1/8 inch thick.
- D. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

- H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

## 2.5 MANUFACTURED SHEET METAL FLASHING AND TRIM

- A. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counter-flashing pieces, and compatible with flashing indicated [with factory-mitered and -welded corners and junctions and with interlocking counter-flashing on exterior face, of same metal as reglet.
  1. Material: Galvanized steel, 0.022 inch thick.
  2. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
  3. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.
  4. Concrete Type: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
  5. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
  6. Accessories:
    - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
    - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
  7. Finish: With manufacturer's standard color coating.

## 2.6 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
  1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
  2. Obtain field measurements for accurate fit before shop fabrication.
  3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
  4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
  2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, non-expansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use.
- G. Do not use graphite pencils to mark metal surfaces.

## 2.7 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch-long sections. Furnish flat-stock gutter brackets and flat-stock gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers and gutter accessories from same metal as gutters. Shop fabricate interior and exterior corners.
1. Gutter Profile: Style A according to cited sheet metal standard.
  2. Expansion Joints: Lap type.
  3. Gutters with Girth up to 15 Inches: Fabricate from the following materials:
    - a. Galvanized Steel: 0.022 inch thick.
  4. Gutters with Girth 16 to 20 Inches: Fabricate from the following materials:
    - a. Galvanized Steel: 0.028 inch thick.
  5. Gutters with Girth 21 to 25 Inches: Fabricate from the following materials:
    - a. Galvanized Steel: 0.034 inch thick.
  6. Gutters with Girth 26 to 30 Inches: Fabricate from the following materials:
    - a. Galvanized Steel: 0.040 inch thick.
  7. Gutters with Girth 31 to 35 Inches: Fabricate from the following materials:
    - a. Galvanized Steel: 0.052 inch thick.

## 2.8 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing and Fascia Cap: Fabricate in minimum 96-inch-long, but not exceeding 12-foot-long sections. Furnish with 6-inch-wide, joint cover plates. Shop fabricate interior and exterior corners.
1. Joint Style: Overlapped, 4 inches wide.

2. Fabricate with scuppers spaced 10 feet apart, to dimensions required with 4-inch-wide flanges and base extending 4 inches beyond cant or tapered strip into field of roof. Fasten gravel guard angles to base of scupper.
3. Fabricate from the Following Materials:
  - a. Galvanized Steel: 0.028 inch thick.
- B. Base Flashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
  1. Galvanized Steel: 0.028 inch thick.
- C. Counter-flashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
  1. Galvanized Steel: 0.022 inch thick.
- D. Flashing Receivers: Fabricate from the following materials:
  1. Galvanized Steel: 0.022 inch thick.
- E. Roof-Penetration Flashing: Fabricate from the following materials:
  1. Galvanized Steel: 0.028 inch thick.
- F. Roof-Drain Flashing: Fabricate from the following materials:
  1. Stainless Steel: 0.016 inch thick.

## 2.9 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
  1. Galvanized Steel: 0.022 inch thick.
- B. Valley Flashing: Fabricate from the following materials:
  1. Galvanized Steel: 0.028 inch thick.
- C. Drip Edges: Fabricate from the following materials:
  1. Galvanized Steel: 0.022 inch thick.
- D. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:
  1. Galvanized Steel: 0.022 inch thick.
- E. Counter-flashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
  1. Galvanized Steel: 0.022 inch thick.
- F. Flashing Receivers: Fabricate from the following materials:
  1. Galvanized Steel: 0.022 inch thick.
- G. Roof-Penetration Flashing: Fabricate from the following materials:
  1. Galvanized Steel: 0.028 inch thick.

## 2.10 MISCELLANEOUS SHEET METAL FABRICATIONS

- A. Equipment Support Flashing: Fabricate from the following materials:

1. Galvanized Steel: 0.028 inch thick.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
  1. Verify compliance with requirements for installation tolerances of substrates.
  2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
  3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- B. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, according to manufacturers' written instructions, and using adhesive where possible to minimize use of mechanical fasteners under sheet metal.
- C. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps and edges with roller. Cover underlayment within 14 days.
- D. Apply slip sheet, wrinkle free, over underlayment before installing sheet metal flashing and trim.

#### 3.3 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners[, **solder**], protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
  1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.



2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
  3. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
  4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
  5. Torch cutting of sheet metal flashing and trim is not permitted.
  6. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
1. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
  2. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
  2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

### 3.4 ROOF-DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

- B. Hanging Gutters: Join sections with riveted and soldered joints. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.
1. Fasten gutter spacers to front and back of gutter.
  2. Anchor and loosely lock back edge of gutter to continuous eave flashing.
  3. Anchor gutter with gutter brackets spaced not more than 36 inches apart to roof deck, unless otherwise indicated, and loosely lock to front gutter bead.
  4. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.
- C. Downspouts: Join sections with 1-1/2-inch telescoping joints.
1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c.
  2. Provide elbows at base of downspout to direct water away from building.
  3. Connect downspouts to underground drainage system.

### 3.5 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.
- C. Pipe or Post Counter-flashing: Install counter-flashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- D. Counter-flashing: Coordinate installation of counter-flashing with installation of base flashing. Insert counter-flashing in reglets or receivers and fit tightly to base flashing. Extend counter-flashing 4 inches over base flashing. Lap counter-flashing joints minimum of 4 inches. Secure in waterproof manner by means of anchor and washer at 36-inch centers unless otherwise indicated.
- E. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

### 3.6 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

### 3.7 MISCELLANEOUS FLASHING INSTALLATION

- A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.
- B. Overhead-Piping Safety Pans: Suspend pans from structure above, independent of other overhead items such as equipment, piping, and conduit, unless otherwise indicated on Drawings. Pipe and install drain line to plumbing waste or drainage system.

### 3.8 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

### 3.9 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

## 077129 MANUFACTURED ROOF EXPANSION JOINTS

### 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. Flanged bellows-type roof expansion joints.
- 2. Extruded bellows roof expansion joints.
- 3. Aluminum roof expansion joints.
- 4. Preformed foam sealant-type roof expansion joints.

- B. Related Requirements:

- 1. Section 061000 "Rough Carpentry" for wooden curbs or cants for mounting roof expansion joints.
- 2. Section 076200 "Sheet Metal Flashing and Trim" for shop- and field-fabricated sheet metal expansion-joint systems, flashing, and other sheet metal items.
- 3. Section 077200 "Roof Accessories" for manufactured and prefabricated metal roof curbs.

#### 1.3 ACTION SUBMITTALS

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

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each fire-barrier provided as part of a roof-expansion-joint assembly, for tests performed by a qualified testing agency.
- B. Sample Warranties: For special warranties.

#### 1.5 WARRANTY

- A. Special Warranty: Manufacturer and Installer agree to repair or replace roof expansion joints and components that leak, deteriorate beyond normal weathering, or otherwise fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: 25 years from date of Substantial Completion.

- B. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof expansion joints that show evidence of deterioration of factory-applied finishes within specified warranty period.
1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Warranty Period: 25 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint seals, failure of connections, and other detrimental effects.
1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

### 2.2 FLANGED BELLOWS-TYPE ROOF EXPANSION JOINTS

- A. Flanged Bellows-Type Roof Expansion Joint: Factory-fabricated, continuous, waterproof, joint cover consisting of exposed membrane bellows laminated to flexible, closed-cell support foam, and secured along each edge to 3- to 4-inch wide metal flange.
1. Source Limitations: Obtain flanged bellows-type roof expansion joints approved by roofing manufacturer and that are part of roofing membrane warranty.
  2. Joint Movement Capability: Plus and minus 50 percent of joint size.
  3. Bellows: Neoprene flexible membrane, nominal 60 mils thick.
  4. Flanges: Aluminum, 0.040 inch thick.
  5. Configuration: Angle formed to fit curbs as indicated on Drawings.
  6. Corner, Intersection, and Transition Units: Provide factory-fabricated units for corner and joint intersections and horizontal and vertical transitions including those to other building expansion joints.
  7. Cover Membrane: Neoprene flexible membrane, factory laminated to bellows and covering entire joint assembly and curbs.
    - a. Color: Black.
  8. Accessories: Provide splicing units, adhesives, and other components as recommended by roof-expansion-joint manufacturer for complete installation..
  9. Secondary Seal: Continuous, waterproof membrane within joint and attached to substrate on sides of joint below the primary bellows assembly.
    - a. Thermal Insulation: Fill space above secondary seal with flexible vapor retarder insulation; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E84.

10. Fire Barrier: Manufacturer's standard fire barrier for fire-resistance-rated expansion joint system.

B. Materials:

1. Galvanized-Steel Sheet: ASTM A653/A653M, hot-dip zinc-coating designation G90
2. Copper Sheet: ASTM B370, cold-rolled copper sheet, H00 or H01 temper.
3. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304.
4. Aluminum Sheet: ASTM B209, mill finish, with temper to suit forming operations and performance required.
  - a. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious or preservative-treated wood materials.
5. EPDM Membrane: ASTM D4637/D4637M, type standard with manufacturer for application.
6. Neoprene Membrane: Neoprene sheet recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil; and as standard with roof-expansion-joint manufacturer for application.
7. PVC Membrane: ASTM D4434/D4434M, type standard with manufacturer for application.

### 2.3 EXTRUDED BELLOWS ROOF EXPANSION JOINTS

- A. Extruded Bellows Roof Expansion Joint: Manufactured, continuous, waterproof, joint cover assembly; consisting of primary and secondary, single-layered, elastomeric seals; secured along each edge with extruded-aluminum retainers for fastening to substrate.

1. Joint Movement Capability: Plus and minus 50 percent of joint size.
2. Primary Seal: Silicone extrusion; color: Black.
3. Secondary Seal: EPDM, or manufacturer's standard elastomeric seal.
4. Drain-Tube Assemblies: Equip secondary seal with drain tubes and seals to direct collected moisture as indicated on Drawings.
5. Corner, Intersection, and Transition Units: Provide factory-fabricated units for corner and joint intersections and horizontal and vertical transitions including those to other building expansion joints.

B. Materials:

1. Aluminum: ASTM B221 for extrusions; mill finish, with temper to suit forming operations and performance required.
  - a. Apply manufacturer's standard protective coating on aluminum surfaces in contact with cementitious or preservative-treated wood materials.
2. Silicone Extrusions: ASTM D2000, UV stabilized, and that does not propagate flame.
3. EPDM Membrane: ASTM D4637, type standard with manufacturer for application.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine joint openings, substrates, and expansion-control joint systems that interface with roof expansion joints, for suitable conditions where roof expansion joints will be installed.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Comply with manufacturer's written instructions for handling and installing roof expansion joints.
  - 1. Anchor roof expansion joints securely in place, with provisions for required movement. Use fasteners, protective coatings, sealants, and miscellaneous items as required to complete roof expansion joints.
  - 2. Install roof expansion joints true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
  - 3. Provide for linear thermal expansion of roof-expansion-joint materials.
  - 4. Provide uniform profile of roof expansion joint throughout its length; do not stretch or squeeze membranes.
  - 5. Provide uniform, neat seams.
  - 6. Install roof expansion joints to fit substrates and to result in watertight performance.
- B. Directional Changes: Install factory-fabricated units at directional changes to provide continuous, uninterrupted, and watertight joints.
- C. Transitions to Other Expansion-Control Joint Assemblies: Coordinate installation of roof expansion joints with other exterior expansion-control joint assemblies specified in Section 079513.16 "Exterior Expansion Joint Cover Assemblies" to result in watertight performance. Install factory-fabricated units at transitions between roof expansion joints and exterior expansion-control joint systems.
- D. Splices: Splice roof expansion joints to provide continuous, uninterrupted, and waterproof joints.
  - 1. Install waterproof splices and prefabricated end dams to prevent leakage of secondary-seal membrane.
- E. Fire Barrier: Install fire barrier as required by manufacturer to provide continuous, uninterrupted fire resistance throughout length of roof expansion joint, including transitions and end joints.
- F. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

END OF SECTION 077129

## SECTION 077200 - ROOF ACCESSORIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Roof curbs.
- 2. Equipment supports.
- 3. Preformed flashing sleeves.

- B. Related Sections:

- 1. Section 076200 "Sheet Metal Flashing and Trim" for shop- and field-formed metal flashing, roof-drainage systems, roof expansion-joint covers, and miscellaneous sheet metal trim and accessories.

#### 1.3 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leak-proof, weather-tight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of roof accessory.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

- B. Shop Drawings: For roof accessories.

- 1. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.

- C. Samples: For each exposed product and for each color and texture specified, prepared on Samples of size to adequately show color.



- D. Delegated-Design Submittal: For roof curb and equipment supports indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
1. Detail mounting, securing, and flashing of roof-mounted items to roof structure. Indicate coordinating requirements with roof membrane system.
  2. Wind-Restraint Details: Detail fabrication and attachment of wind restraints. Show anchorage details and indicate quantity, diameter, and depth of penetration of anchors.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
1. Size and location of roof accessories specified in this Section.
  2. Method of attaching roof accessories to roof or building structure.
  3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.
  4. Required clearances.
- B. Sample Warranties: For manufacturer's special warranties.

#### 1.6 CLOSEOUT SUBMITTALS

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

#### 1.7 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period.
1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Finish Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design roof curbs and equipment supports to comply with wind performance requirements, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- C. Wind-Restraint Performance: As indicated on Drawings.

### 2.2 ROOF CURBS

- A. Roof Curbs: Internally reinforced roof-curb units capable of supporting superimposed live and dead loads, including equipment loads and other construction indicated on Drawings, bearing continuously on roof structure, and capable of meeting performance requirements; with welded or mechanically fastened and sealed corner joints and integrally formed deck-mounting flange at perimeter bottom.
- B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.
- C. Supported Load Capacity: As required to support existing equipment.
- D. Material: Zinc-coated (galvanized) steel sheet, 0.064 inch thick.
  - 1. Finish: Two-coat fluoropolymer.
  - 2. Color: As selected by Architect from manufacturer's full range.
- E. Construction:
  - 1. Curb Profile: Manufacturer's standard compatible with roofing system.
  - 2. On ribbed or fluted metal roofs, form deck-mounting flange at perimeter bottom to conform to roof profile.
  - 3. Fabricate curbs to minimum height of 12 inches above roofing surface unless otherwise indicated.
  - 4. Top Surface: Level top of curb, with roof slope accommodated by sloping deck-mounting flange.
  - 5. Sloping Roofs: Where roof slope exceeds 1:48, fabricate curb with perimeter curb height tapered to accommodate roof slope so that top surface of perimeter curb is level. Equip unit with water diverter or cricket on side that obstructs water flow.
  - 6. Insulation: Factory insulated with 1-1/2-inch-thick glass-fiber board insulation.
  - 7. Liner: Same material as curb, of manufacturer's standard thickness and finish.
  - 8. Nailer: Factory-installed wood nailer along top flange of curb, continuous around curb perimeter.

9. Wind Restraint Straps and Base Flange Attachment: Provide wind restraint straps, welded strap connectors, and base flange attachment to roof structure at perimeter of curb, of size and spacing required to meet wind uplift requirements.
10. Platform Cap: Where portion of roof curb is not covered by equipment, provide weather-tight platform cap formed from 3/4-inch thick plywood covered with metal sheet of same type, thickness, and finish as required for curb.
11. Metal Counter-flashing: Manufacturer's standard, removable, fabricated of same metal and finish as curb.

## 2.3 EQUIPMENT SUPPORTS

- A. Equipment Supports: Rail-type metal equipment supports capable of supporting superimposed live and dead loads between structural supports, including equipment loads and other construction indicated on Drawings, spanning between structural supports; capable of meeting performance requirements; with welded or mechanically fastened and sealed corner joints and integrally formed structure-mounting flange at bottom.
- B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.
- C. Supported Load Capacity: As required to support existing equipment.
- D. Material: Zinc-coated (galvanized) steel sheet, 0.064 inch thick.
  1. Finish: Two-coat fluoropolymer.
  2. Color: As selected by Architect from manufacturer's full range.
- E. Construction:
  1. Curb Profile: Manufacturer's standard compatible with roofing system.
  2. Insulation: Factory insulated with 1-1/2-inch-thick glass-fiber board insulation.
  3. Liner: Same material as equipment support, of manufacturer's standard thickness and finish.
  4. Nailer: Factory-installed continuous wood nailers 5-1/2 inches wide on top flange of equipment supports, continuous around support perimeter.
  5. Wind Restraint Straps and Base Flange Attachment: Provide wind restraint straps, welded strap connectors, and base flange attachment to roof structure at perimeter of curb of size and spacing required to meet wind uplift requirements.
  6. Platform Cap: Where portion of equipment support is not covered by equipment, provide weather-tight platform cap formed from 3/4-inch thick plywood covered with metal sheet of same type, thickness, and finish as required for curb.
  7. Metal Counter-flashing: Manufacturer's standard, removable, fabricated of same metal and finish as equipment support.
  8. On ribbed or fluted metal roofs, form deck-mounting flange at perimeter bottom to conform to roof profile.
  9. Fabricate equipment supports to minimum height of 12 inches above roofing surface unless otherwise indicated.
  10. Sloping Roofs: Where roof slope exceeds 1:48, fabricate each support with height to accommodate roof slope so that tops of supports are level with each other. Equip supports with water diverters or crickets on sides that obstruct water flow.

## 2.4 PREFORMED FLASHING SLEEVES

- A. Vent Stack Flashing: Metal flashing sleeve, un-insulated, with integral deck flange.
1. Metal: Aluminum sheet, 0.063 inch thick.
  2. Height: 13 inches.
  3. Diameter: To match existing.
  4. Finish: Manufacturer's standard.

## 2.5 METAL MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation.
1. Exposed Coil-Coated Finish: Pre-painted by the coil-coating process to comply with ASTM A 755/A 755M. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - a. Two-Coat Fluoropolymer Finish: AAMA 621. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
  2. Concealed Finish: Pre-treat with manufacturer's standard white or light-colored acrylic or polyester-backer finish consisting of prime coat and wash coat, with a minimum total dry film thickness of 0.5 mil.
- B. Aluminum Sheet: ASTM B 209, manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.
1. Mill Finish: As manufactured.
  2. Exposed Coil-Coated Finish: Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - a. Two-Coat Fluoropolymer Finish: AAMA 2605. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
  3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester-backer finish consisting of prime coat and wash coat, with a minimum total dry film thickness of 0.5 mil.
- C. Aluminum Extrusions and Tubes: ASTM B 221, manufacturer's standard alloy and temper for type of use, finished to match assembly where used; otherwise mill finished.
- D. Steel Shapes: ASTM A 36/A 36M, hot-dip galvanized according to ASTM A 123/A 123M unless otherwise indicated.
- E. Steel Tube: ASTM A 500/A 500M, round tube.
- F. Galvanized-Steel Tube: ASTM A 500/A 500M, round tube, hot-dip galvanized according to ASTM A 123/A 123M.
- G. Steel Pipe: ASTM A 53/A 53M, galvanized.

## 2.6 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, thickness and thermal resistivity as indicated.
- C. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction and complying with AWPA C2; not less than 1-1/2 inches thick.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.
- E. Underlayment:
  - 1. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
  - 2. Polyethylene Sheet: 6-mil-thick polyethylene sheet complying with ASTM D 4397.
  - 3. Slip Sheet: Building paper, 3 lb/100 sq. ft. minimum, rosin sized.
  - 4. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
  - 5. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide non-removable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
  - 6. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
- F. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
- G. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
- H. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.
- I. Asphalt Roofing Cement: ASTM D 4586/D 4586M, asbestos free, of consistency required for application.

## 2.7 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. General: Install roof accessories according to manufacturer's written instructions.
  - 1. Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
  - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
  - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
  - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
  - 1. Coat concealed side of uncoated aluminum roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
  - 2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of underlayment and cover with manufacturer's recommended slip sheet.
  - 3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.
- C. Roof Curb Installation: Install each roof curb so top surface is level.
- D. Equipment Support Installation: Install equipment supports so top surfaces are level with each other.
- E. Preformed Flashing-Sleeve Installation: Secure flashing sleeve to roof membrane according to flashing-sleeve manufacturer's written instructions; flash sleeve flange to surrounding roof membrane according to roof membrane manufacturer's instructions.

- F. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.

### 3.3 REPAIR AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780/A 780M.
- B. Touch up factory-primed surfaces with compatible primer ready for field painting according to Section 099113 "Exterior Painting."
- C. Clean exposed surfaces according to manufacturer's written instructions.
- D. Clean off excess sealants.
- E. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

## SECTION 079200 - 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. Non-staining silicone joint sealants.
  - 3. Urethane joint sealants.
  - 4. Mildew-resistant joint sealants.
  - 5. Butyl joint sealants.
  - 6. Latex joint sealants.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. 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.
- C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- 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.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Product Test Reports: For each kind of joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.



- C. Pre-construction Laboratory Test Schedule: Include the following information for each joint sealant and substrate material to be tested:
  - 1. Joint-sealant location and designation.
  - 2. Manufacturer and product name.
  - 3. Type of substrate material.
  - 4. Proposed test.
  - 5. Number of samples required.
- D. Preconstruction Laboratory 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 are needed for adhesion.
- E. Preconstruction Field-Adhesion-Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.
- F. Field-Adhesion-Test Reports: For each sealant application tested.
- G. Sample Warranties: For special warranties.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
- B. Product Testing: Test joint sealants using a qualified testing agency.
  - 1. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.
- C. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

## 1.6 PRE-CONSTRUCTION TESTING

- A. Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
  - 1. Adhesion Testing: Use ASTM C 794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
  - 2. Compatibility Testing: Use ASTM C 1087 to determine sealant compatibility when in contact with glazing and gasket materials.
  - 3. Stain Testing: Use ASTM C 1248 to determine stain potential of sealant when in contact with masonry substrates.

4. Submit manufacturer's recommended number of pieces of each type of material, including joint substrates, joint-sealant backings, and miscellaneous materials.
  5. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
  6. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures, including use of specially formulated primers.
  7. Testing will not be required if joint-sealant manufacturers submit data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, staining of, and compatibility with joint substrates and other materials matching those submitted.
- B. Pre-construction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
  2. Conduct field tests for each kind of sealant and joint substrate.
  3. Notify Architect seven days in advance of dates and times when test joints will be erected.
  4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
    - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
      - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
  5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
  6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

## 1.7 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
  2. When joint substrates are wet.
  3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

## 1.8 WARRANTY

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

## PART 2 - PRODUCTS

### 2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

### 2.2 SILICONE JOINT SEALANTS

- A. Silicone, S, NS, 50, NT: Single-component, non-sag, plus 50 percent and minus 50 percent movement capability, non-traffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.

### 2.3 NONSTAINING SILICONE JOINT SEALANTS

- A. Non-staining Joint Sealants: No staining of substrates when tested according to ASTM C 1248.
- B. Silicone, Non-staining, S, NS, 50, NT: Non-staining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, non-traffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.

## 2.4 URETHANE JOINT SEALANTS

- A. Urethane, S, NS, 25, NT: Single-component, non-sag, non-traffic-use, plus 25 percent and minus 25 percent movement capability, urethane joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.
- B. Urethane, S, P, 25, T, NT: Single-component, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and non-traffic-use, urethane joint sealant; ASTM C 920, Type S, Grade P, Class 25, Uses T and NT.

## 2.5 MILDEW-RESISTANT JOINT SEALANTS

- A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.
- B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, non-sag, plus 25 percent and minus 25 percent movement capability, non-traffic-use, acid-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.

## 2.6 BUTYL JOINT SEALANTS

- A. Butyl-Rubber-Based Joint Sealants: ASTM C 1311.

## 2.7 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

## 2.8 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Non-staining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type B (bi-cellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

## 2.9 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: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean 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. Porous joint substrates include the following:
    - a. Concrete.
    - b. Masonry.
    - c. Unglazed surfaces of ceramic tile.
    - d. Exterior insulation and finish systems.
  - 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. Nonporous joint substrates include the following:

- a. Metal.
  - b. Glass.
  - c. Porcelain enamel.
  - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
1. Do not leave gaps between ends of sealant backings.
  2. Do not stretch, twist, puncture, or tear sealant backings.
  3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
  2. Completely fill recesses in each joint configuration.
  3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.

2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

### 3.4 FIELD QUALITY CONTROL

#### A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
  - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
2. Inspect tested joints and report on the following:
  - a. Whether sealants filled joint cavities and are free of voids.
  - b. Whether sealant dimensions and configurations comply with specified requirements.
  - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.
3. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.
4. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

#### B. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

### 3.5 CLEANING

- #### A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

### 3.7 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal non-traffic surfaces.
1. Joint Locations:
    - a. Joints between metal panels.
  2. Joint Sealant: Silicone, non-staining, S, NS, 50, NT.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- B. Joint-Sealant Application: Interior joints in horizontal traffic surfaces.
1. Joint Locations:
    - a. Control and expansion joints in tile flooring.
  2. Joint Sealant: Urethane, S, P, 25, T, NT.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- C. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces.
1. Joint Locations:
    - a. Vertical joints on exposed surfaces of partitions.
  2. Joint Sealant: Urethane, S, NS, 25, NT.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- D. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces not subject to significant movement.
1. Joint Locations:
    - a. Perimeter joints between interior wall surfaces and frames of interior doors & windows.
  2. Joint Sealant: Acrylic latex.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- E. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal non-traffic surfaces.
1. Joint Locations:
    - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
    - b. Tile control and expansion joints where indicated.



2. Joint Sealant: Silicone, mildew resistant, acid curing, S, NS, 25, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

F. Joint-Sealant Application: Concealed mastics.

1. Joint Locations:
  - a. Aluminum thresholds.
  - b. Sill plates.
2. Joint Sealant: Butyl-rubber based.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 079200

## SECTION 099113 - EXTERIOR PAINTING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
  - 1. Metal Substrates and structural steel members as indicated on drawings in conjunction with repair notes.
  - 2. Miscellaneous painting touch up in roof accessories.

#### 1.3 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- D. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- E. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- F. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.
- B. Samples for Initial Selection: For each type of topcoat product.
- C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches square.
  2. Apply coats on Samples in steps to show each coat required for system.
  3. Label each coat of each Sample.
  4. Label each Sample for location and application area.
- D. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

#### 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

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

#### 1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints in rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Sherwin Williams
- B. Benjamin Moore
- C. Lanco

#### 2.2 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: As selected by Architect from manufacturer's full range.

D. Paints and Coatings.

1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufacturer's product instructions for optimal color conformance.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
1. Use applicators and techniques suited for paint and substrate indicated.
  2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
  3. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  4. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint undercoats same color as top coat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 FIELD QUALITY CONTROL

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

### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.
- E. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

### 3.6 EXTERIOR PAINTING SCHEDULE

- A. Metal Substrates at roof decking and steel joist structures:
  - 1. Paint System (Basis of Design):
    - a. 1st Coat (Spot Prime on rusted areas): S-W Macropoxy 5000 (Formerly Macropoxy 920) Penetrating Epoxy Primer/Sealer, B58W20/B58V20 Series (1.0-1.5 mils wet, 1.0-1.5 mils dry per coat).
    - b. 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58-620/B58V620 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
    - c. 3rd Coat: S-W Acrolon Ultra High-Performance Polyurethane, B65T824/B65V820 Series. (3.5-5.5 mils wet, 2.0-3.0 mils dry per coat).

END OF SECTION 099113



## **DRAWINGS**

**FOR**

**TMT WAREHOUSE #1 RE-ROOF**

**Project No.: T2018.01**

**Contract No.: C-1631A**

**Talleyrand Marine Terminal**

# TALLEYRAND MARINE TERMINAL WAREHOUSE #1 RE-ROOF

JACKSONVILLE PORT AUTHORITY  
2701 TALLEYRAND AVE.  
JACKSONVILLE, FL 32206

PROJECT NO. T2018-01  
100% CONSTRUCTION DOCUMENTS / BID SET  
SEPTEMBER, 2021

ARCHITECT / ENGINEER:

# Jacobs

CLIENT:

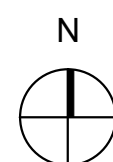
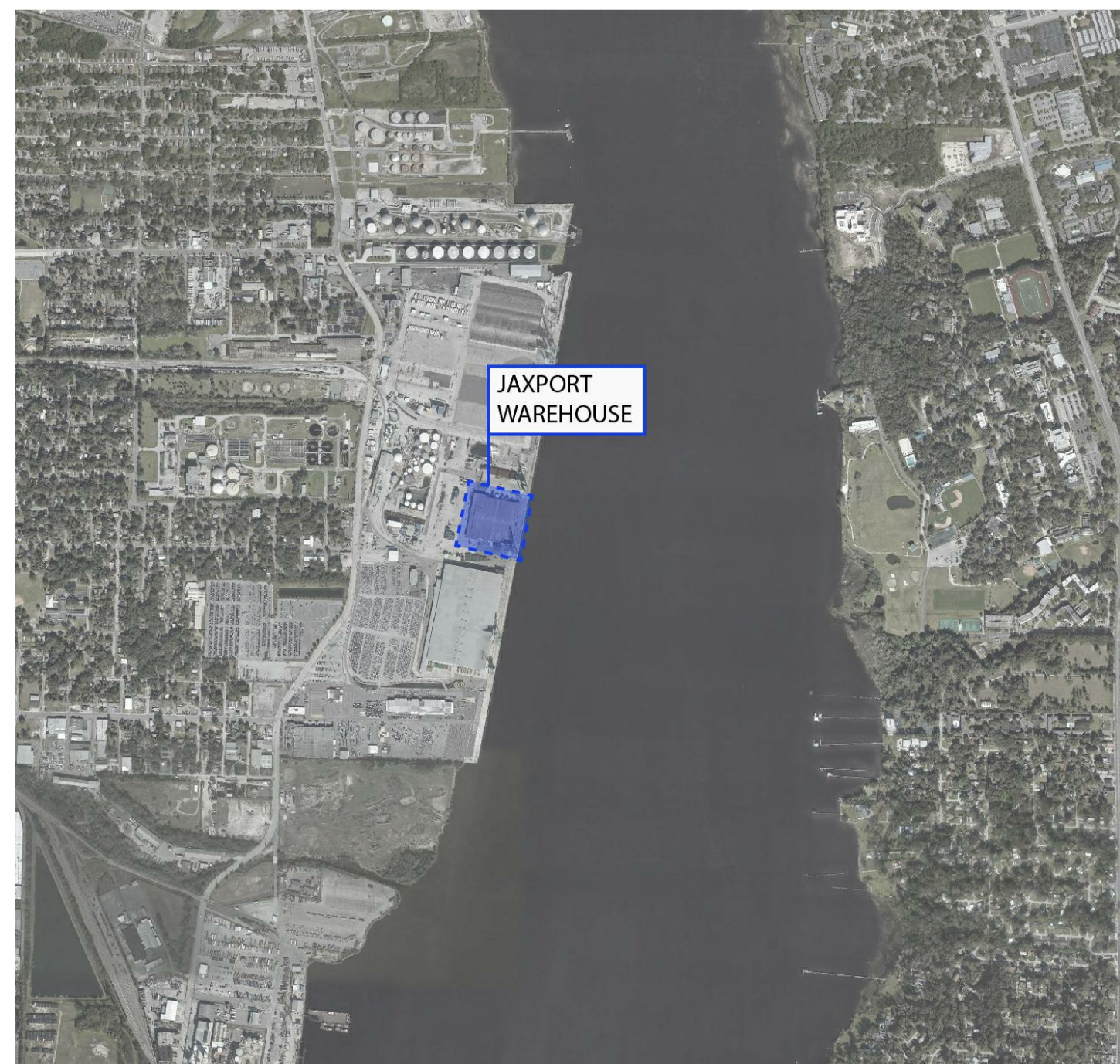


**Jacobs**

3150 SW 38th Ave, Suite 500  
Miami FL, 33146  
P: 305-441-1864  
www.Jacobs.com

NO.	DATE	DR	BC	CHK	APVD	BY	APVD	KR

LOCATION MAP:



SCOPE OF WORK:

THE OBJECTIVE OF THIS PROJECT IS TO REMOVE AND REPLACE APPROXIMATELY 184,920 TOTAL SQUARE FEET OF ROOF SYSTEM AT TALLEYRAND MARINE TERMINAL WAREHOUSE #1. IN ADDITION, THERE WILL BE MINOR STRUCTURAL METAL DECK REPAIRS OR REPLACEMENTS DEPENDING ON THE EXISTING CONDITIONS.

SITE DATA:

LOCATION: JACKSONVILLE PORT AUTHORITY  
2701 TALLEYRAND AVE.  
JACKSONVILLE, FL 32206

JURISDICTION: CITY OF JACKSONVILLE

CODE AUTHORITIES: CITY OF JACKSONVILLE AND APPLICABLE ORDINANCES  
MUNICIPAL CODE

LEVEL OF ALTERATION: LEVEL 1

ZONING CLASSIFICATION: INDUSTRIAL WATER (IW)

USE AND OCCUPANCY CLASSIFICATION:  
OCCUPANCY CLASSIFICATION (PRIMARY) USE STORAGE (S-1)

CONSTRUCTION TYPE:  
EXISTING III B

CODE DATA:

FBC FLORIDA BUILDING CODE - 2020 7TH EDITION  
FEBFC FLORIDA BUILDING CODE, EXISTING BUILDING 2020 7TH EDITION  
FFPC FLORIDA FIRE PREVENTION CODE - 2020 EDITION

CONTACTS:

ARCHITECT:  
JACOBS  
KEVIN REGALADO  
3150 SW 38TH AVE. SUITE 500  
MIAMI FL, 33146  
PH: 305- 441-1864

STRUCTURAL ENGINEER:  
JACOBS  
ADAM WARGA  
200 S. ORANGE AVENUE, SUITE 900  
ORLANDO, FL 32801  
PH: (407) 903-5001

DRAWING INDEX:

GENERAL:  
CS-00 COVER SHEET AND INDEX  
G-001 GENERAL NOTES, DEMOLITION NOTES, SYMBOLS AND ABBREVIATIONS

STRUCTURAL:  
S-001 GENERAL NOTES  
S-002 WIND PRESSURE SCHEDULE AND DIAGRAMS, SYMBOLS, AND ABBREVIATIONS  
S-201 ROOF FRAMING PLAN  
S-501 SECTION AND DETAILS

ARCHITECTURAL:  
AD-103 DEMOLITION ROOF PLAN AND DETAIL  
A-101 OVERALL FLOOR PLAN  
A-103 OVERALL ROOF PLAN  
A-201 BUILDING ELEVATIONS  
A-501 PROPOSED MODIFIED BIT ROOF DETAILS  
A-502 PROPOSED MODIFIED BIT ROOF DETAILS



2701 Talleyrand Ave.  
Jacksonville, FL 32206

Project Title:  
TALLEYRAND MARINE TERMINAL  
WAREHOUSE #1 RE-ROOF

COVER SHEET

Date: SEPTEMBER 2021  
Proj. No.: EGXM2600  
Drawing No.:

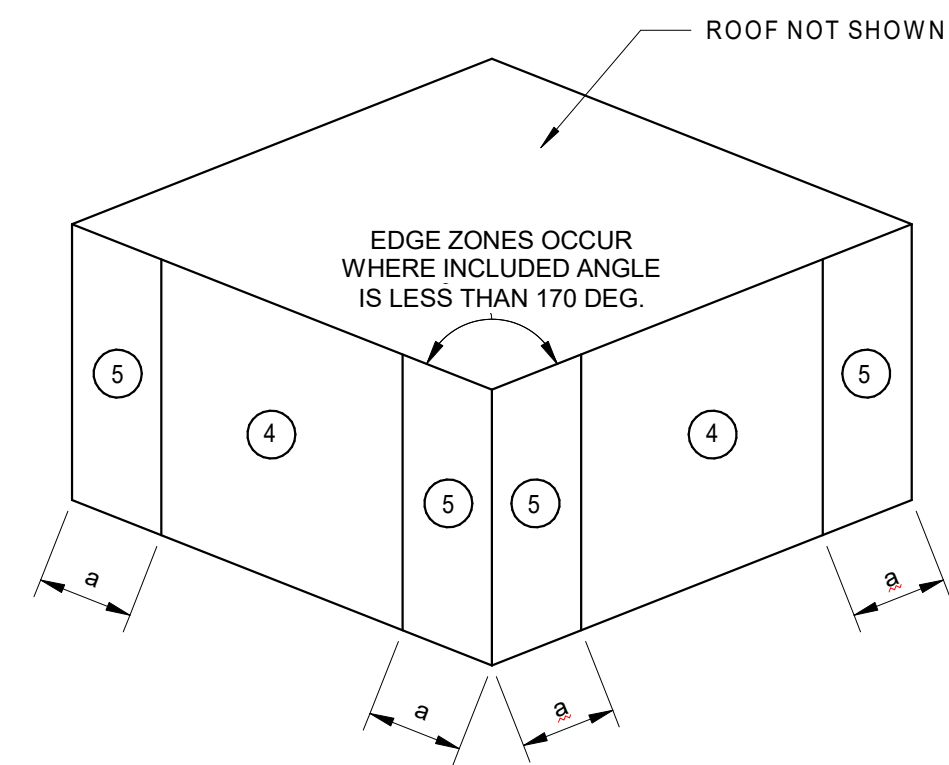
CS-000



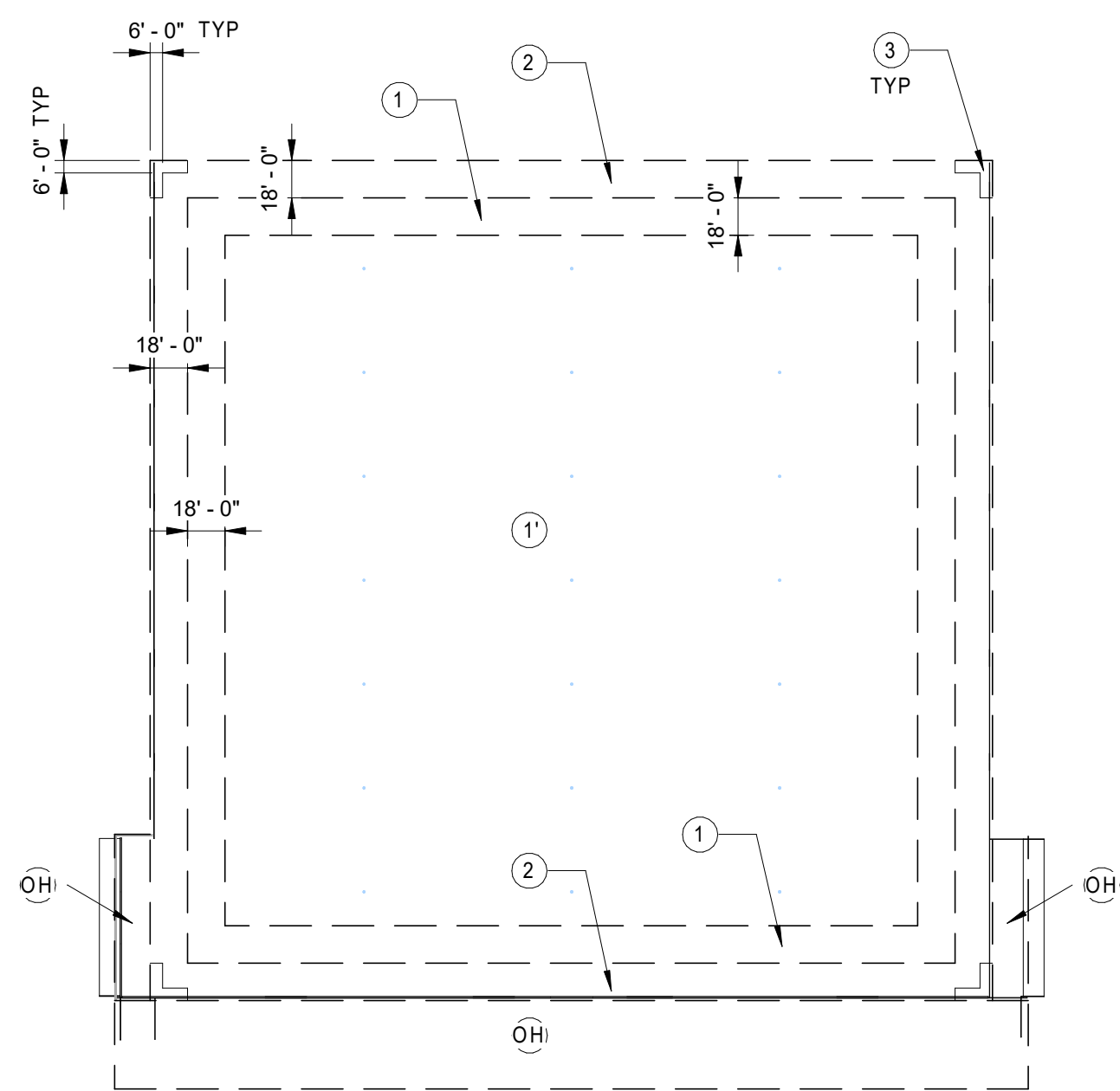


<b>GENERAL NOTES</b>	<b>STRUCTURAL STEEL</b>	<b>METAL DECK</b>																																																																																																																																																																																																																																																																																																																																																																																																																	
<p>GENERAL BUILDING AND DESIGN CODES:</p> <ol style="list-style-type: none"> <li>THE FLORIDA BUILDING CODE 2020, PUBLISHED BY THE FLORIDA BUILDING COMMISSION.</li> <li>ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES</li> <li>AISC MANUAL OF STEEL CONSTRUCTION AND CODE OF STANDARD PRACTICE, THE LATEST EDITION ADOPTED BY GOVERNING CODES.</li> <li>SDI CODE OF RECOMMENDED STANDARD PRACTICE FOR COMPOSITE DECK, FORM DECKS, AND ROOF DECK CONSTRUCTION, THE LATEST EDITION ADOPTED BY GOVERNING CODES.</li> <li>SJI RECOMMENDED CODE OF STANDARD PRACTICE FOR STEEL JOISTS AND JOIST GIRDERS, THE LATEST EDITION ADOPTED BY GOVERNING CODES.</li> </ol> <p><b>DESIGN LOADS:</b></p> <ol style="list-style-type: none"> <li><b>DEAD LOADS</b> <ol style="list-style-type: none"> <li>ROOF DEAD LOADS <span style="float: right;">SELF-WEIGHT</span></li> </ol> </li> <li><b>LIVE LOADS:</b> <ol style="list-style-type: none"> <li>ROOF LIVE LOADS <span style="float: right;">20 PSF</span></li> <li>REDUCTION OF LIVE LOADS:                     <ol style="list-style-type: none"> <li>LIVE LOADS HAVE BEEN REDUCED IN DESIGNS USING THE STANDARD PROCEDURE FROM THE BUILDING CODE.</li> </ol> </li> </ol> </li> <li><b>WIND LOADS:</b> <ol style="list-style-type: none"> <li>ULTIMATE DESIGN WIND SPEED (3 SECOND GUST) – <span style="float: right;">125 MPH</span></li> <li>NOMINAL DESIGN WIND SPEED (3-SECOND GUST) – <span style="float: right;">97 MPH</span></li> <li>BUILDING RISK CATEGORY: <span style="float: right;">II</span></li> <li>WIND EXPOSURE CATEGORY: <span style="float: right;">D</span></li> <li>ENCLOSURE CLASSIFICATION: <span style="float: right;">ENCLOSED</span></li> <li>INTERNAL PRESSURE COEFFICIENT - <span style="float: right;"><math>C_{pi} = +/- 0.18</math></span></li> <li>REFER TO S-002 FOR COMPONENTS AND CLADDING DIAGRAMS AND PRESSURE TABLES.</li> </ol> </li> <li><b>RAIN LOADS:</b> <ol style="list-style-type: none"> <li>RAIN INTENSITY <span style="float: right;">4.5 IN/HR</span></li> <li>RAIN LOAD <span style="float: right;">0 PSF</span></li> </ol> </li> </ol> <p><b>A.</b> SPECIFICATIONS ARE PART OF THE CONSTRUCTION DOCUMENTS AND MUST BE USED IN CONJUNCTION WITH THE DRAWINGS. WHERE CONFLICTS EXIST IN THE STRUCTURAL CONTRACT DOCUMENTS, THE STRICTEST OF ALL REQUIREMENTS AS INDICATED BY THE STRUCTURAL ENGINEER OF RECORD SHALL GOVERN.</p> <p><b>B.</b> VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK OR FABRICATING MATERIALS. NOTIFY ARCHITECT/ENGINEER OF DISCREPANCIES BEFORE PROCEEDING WITH ANY PHASE OF WORK. CONTRACTOR SHALL ENSURE THAT EXISTING AND ADJACENT BUILDINGS AND PROPERTY ARE NOT DAMAGED DURING CONSTRUCTION.</p> <p><b>C.</b> CONTRACTOR SHALL SHORE ALL EXISTING CONSTRUCTION WHEREVER EXISTING SUPPORTS ARE REMOVED TO ALLOW FOR THE INSTALLATION OF NEW CONSTRUCTION WORK. SHORING DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THEIR ENGINEER.</p> <p><b>D.</b> VERIFY THE LOCATION OF CHASES, INSERTS, OPENINGS, SLEEVES, FINISHES, DEPRESSIONS, PADS, AND WALL OPENINGS.</p> <p><b>E.</b> DO NOT SCALE DRAWINGS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS.</p> <p><b>F.</b> DETAIL LABELS CONTAINING "TYPICAL" OR "TYP" ON DRAWINGS APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT DETAILS ARE REFERENCED AT EACH LOCATION. NOTIFY ENGINEER OF CONFLICTS REGARDING APPLICABILITY OF "TYPICAL DETAILS".</p> <p><b>G.</b> THE STRUCTURE, IN ITS FINAL AND COMPLETED STATE, HAS BEEN DESIGNED FOR THE LOADS IDENTIFIED WITHIN THESE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL ENSURE THAT THE STRUCTURE IS NOT OVERLOADED DURING THE CONSTRUCTION PROCESS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ADEQUACY OF THE AS-BUILT STRUCTURE TO SUPPORT ANY APPLIED CONSTRUCTION LOADING, INCLUDING BUT NOT LIMITED TO THOSE DUE TO VEHICLES, EQUIPMENT, MATERIAL HANDLING/STORAGE, SHORING, RESHORING, OR ANY OTHER ITEMS NOT ENUMERATED RELATED TO CONSTRUCTION ACTIVITIES. THE CONTACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER IN THE STATE OF THE PROJECT THAT VALIDATE THE ADEQUACY OF THE AS-BUILT SYSTEM FOR ANY PROPOSED LOADS IN EXCESS OF THOSE NOTED IN THESE DRAWINGS.</p> <p><b>H.</b> THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURE, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, FORMS, AND SCAFFOLDING, SHORING OF RETAINING WALLS, AND OTHER TEMPORARY SUPPORTS AS REQUIRED.</p> <p><b>I.</b> PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON DRAWINGS. EXAMINE THE DRAWINGS OF ALL OTHER PROJECT DISCIPLINES FOR ANY REQUIRED OPENINGS AND PROVIDE FRAMING OR REINFORCEMENT AS REQUIRED FOR THOSE OPENINGS WHETHER EXPLICITLY SHOWN ON THE STRUCTURAL DRAWINGS OR NOT. VERIFY SIZE AND LOCATION OF OPENINGS WITH THE RELEVANT DISCIPLINE SUBCONTRACTORS. DEVIATIONS FROM THE OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED PRIOR TO IMPLEMENTING THE CHANGES. SUBMIT ALL ANTICIPATED OPENINGS THROUGH THE STRUCTURE TO THE ENGINEER OF RECORD FOR REVIEW.</p> <p><b>J.</b> DO NOT CUT OR DRILL THROUGH EXISTING REINFORCING OR TENDONS. X-RAY TO LOCATE REINFORCING OR CABLE TENDONS AT LOCATIONS REQUIRING CUTTING OR CORING PRIOR TO START OF CONSTRUCTION. SUBMIT REINFORCEMENT LOCATION IN CONFLICT WITH DRAWINGS FOR ARCHITECT AND ENGINEER REVIEW.</p> <p><b>K.</b> THE STRUCTURE HAS BEEN DESIGNED TO RESIST THE REQUIRED CODE VERTICAL AND LATERAL FORCES IN THE FINAL, COMPLETED STATE ONLY. THE ABILITY OF THE STRUCTURE TO RESIST THESE FORCES RELIES UPON THE COMPLETE INSTALLATION OF THE GRAVITY- AND LATERAL-FORCE RESISTING SYSTEMS.</p>	<p><b>A.</b> PROVIDE STRUCTURAL STEEL OF THE FOLLOWING ASTM DESIGNATIONS UNLESS OTHERWISE NOTED:</p> <ol style="list-style-type: none"> <li>WIDE FLANGE AND WT SHAPES – ASTM A992</li> <li>M- AND S-SHAPES, CHANNELS AND ANGLES – ASTM A36</li> <li>STRUCTURAL PIPE – ASTM A53, GRADE B</li> <li>STRUCTURAL TUBING (SQUARE, RECTANGULAR, OR ROUND) – ASTM A500, GRADE C</li> <li>BASE PLATES AND MISCELLANEOUS STEEL PLATES – ASTM A36</li> <li>CONNECTION MATERIALS:             <ol style="list-style-type: none"> <li>BEAM COLUMN STIFFENER PLATES AND DOUBLER PLATES TO MATCH THE GRADE STEEL OF STRUCTURAL ELEMENT</li> <li>ALL CONNECTION MATERIALS, EXCEPT AS OTHERWISE NOTED HEREIN OR IN THE DRAWINGS, INCLUDING BEARING PLATES, GUSSET PLATES, STIFFENER PLATES, ANGLES, ETC. – ASTM A36</li> </ol> </li> <li>HIGH STRENGTH BOLTS (SLIP CRITICAL JOINTS FOR ALL BRACES WHERE SPECIFIED) – ASTM A325/A490 OR ASTM F1852</li> <li>HARDENED STEEL WASHERS – ASTM F436</li> <li>HEAVY HEX NUTS – ASTM A563</li> </ol> <p><b>B.</b> WELD MINIMUM SIZE AND STRENGTH</p> <ol style="list-style-type: none"> <li>PROVIDE MINIMUM SIZE OF FILLET WELDS AS SPECIFIED IN TABLE J2.4 OF THE AISC MANUAL.</li> <li>PROVIDE MINIMUM EFFECTIVE THROAT THICKNESS OF PARTIAL PENETRATION GROOVE WELDS AS SPECIFIED IN TABLE J2.3 OF THE AISC MANUAL.</li> <li>DEVELOP THE FULL TENSILE STRENGTH OF THE MEMBER ELEMENT JOINED ON ALL SHOP AND FIELD WELDS UNLESS NOTED OTHERWISE ON THE DRAWINGS.</li> <li>WHERE CONNECTIONS ARE NOTED ON DRAWINGS AS MOMENT CONNECTIONS AND REACTIONS ARE NOT PROVIDED, PROVIDE WELDS TO DEVELOP FULL PLASTIC FLEXURAL CAPACITY OF THE LESSER MEMBER.</li> <li>PROVIDE ELECTRODES FOR FIELD OR SHOP WELDING THAT CONFORM TO AWS D1.1 CLASS E70XX.</li> </ol> <p><b>C.</b> PROVIDE MINIMUM OF TWO BOLTS PER CONNECTION. MINIMUM BOLT DIAMETER TO BE 3/4 INCH.</p> <p><b>D.</b> PROVIDE BOLTS, NUTS, AND WASHERS THAT ARE HOT DIP GALVANIZED ACCORDING TO ASTM A153, CLASS C WHEN USED TO CONNECT STEEL ELEMENTS THAT ARE HOT DIP GALVANIZED AFTER FABRICATION.</p> <p><b>E.</b> STEEL FABRICATION</p> <ol style="list-style-type: none"> <li>FABRICATE AND ASSEMBLE STRUCTURAL MEMBERS/ASSEMBLIES IN SHOP TO GREATEST EXTENT POSSIBLE.</li> <li>CAMBER OF STRUCTURAL STEEL MEMBERS IS INDICATED ON THE DRAWINGS. WHERE POSSIBLE, CAMBER OF BEAMS TO BE APPLIED BY COLD BEND PROCESS. CAMBERS INDICATED ON DRAWINGS ARE INTENDED TO BE FINAL CAMBERS AT TIME OF ERECTION.</li> <li>SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF RECORD.</li> <li>BE RESPONSIBLE FOR ALL ERRORS OF DETAILING ON THE SHOP DRAWINGS, ERRORS IN FABRICATION, AND THE CORRECT FITTING OF STRUCTURAL STEEL MEMBERS.</li> </ol> <p><b>F.</b> CONFORM TO THE AISC CODE OF STANDARD PRACTICE FOR ERECTION TOLERANCES. FIELD MODIFICATION TO STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR APPROVAL BY THE ENGINEER OF RECORD.</p> <p><b>G.</b> CLEAN STEEL OF RUST, LOOSE MILL SCALE, AND OTHER FOREIGN MATERIALS WHERE REQUIRED FOR FABRICATION, FITTING UP, OR WELDING.</p> <p><b>H.</b> DO NOT CUT STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR REVIEW AND APPROVAL OF THE ENGINEER OF RECORD.</p> <p><b>I.</b> STEEL MEMBERS AND THEIR CONNECTIONS SHALL BE HOT-DIP GALVANIZED WHERE ANY COMPONENTS ARE PERMANENTLY EXPOSED TO THE EXTERIOR OR ARE WITHIN AREAS OF UNCONDITIONED SPACE. HOT-DIP GALVANIZATION SHALL OCCUR AFTER FABRICATION UNLESS NOTED OTHERWISE IN THE DRAWINGS OR SPECIFICATIONS TO RECEIVE A PRIMER AND/OR FINISH COAT. SUCH ITEMS INCLUDE BUT ARE NOT LIMITED TO:             <ol style="list-style-type: none"> <li>SHelf ANGLES</li> <li>PARAPET WALL SUPPORTING MEMBERS</li> <li>SCREEN WALL SUPPORTING MEMBERS</li> <li>EMBEDDED PLATES IN CONCRETE</li> <li>BUILDING CLADDING SUPPORT STEEL</li> </ol> </p> <p><b>J.</b> EXAMINE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR OTHER ITEMS THAT REQUIRE HOT-DIP GALVANIZATION.</p>	<p><b>A.</b> PROVIDE DESIGN, FABRICATION, AND ERECTION OF METAL DECK CONFORMING TO THE STEEL DECK INSTITUTE'S "CODE OF RECOMMENDED STANDARD PRACTICE AND BASIC DESIGN SPECIFICATIONS."</p> <p><b>B.</b> REFER TO SDI STANDARDS FOR DECK FASTENING DETAIL REQUIREMENTS.</p> <p><b>C.</b> DECKS SHALL BE PLACED IN A THREE-SPAN MINIMUM CONDITION UNLESS APPROVED BY ENGINEER OF RECORD. LAP ROOF AND FLOOR DECK ENDS A MINIMUM OF 2 INCHES.</p> <p><b>D.</b> PROVIDE CLOSURES AT ENDS OF DECK OR WHERE CHANGES IN DECK DIRECTION OCCUR AND FASTEN TO SIDES AT 18" ON CENTER.</p> <p><b>E. ROOF DECK</b></p> <ol style="list-style-type: none"> <li>1.5" TYPE B DECK, GALVANIZED G90, 20 GA, WITH MINIMUM EFFECTIVE MOMENT OF INERTIA AND SECTION MODULUS: <math>I_x = 0.197 \text{ in}^4/\text{ft}</math>   <math>I_y = 0.217 \text{ in}^4/\text{ft}</math>   <math>S_{xx} = 0.224 \text{ in}^3/\text{ft}</math>   <math>S_{yy} = 0.229 \text{ in}^3/\text{ft}</math></li> </ol> <ol style="list-style-type: none"> <li>ALL DECK SHALL BE 50 KSI UNLESS NOTED OTHERWISE.</li> <li>SEE DETAILS ON S-501 FOR ATTACHMENT OF DECK TO STRUCTURE.</li> <li>UNLESS NOTED OTHERWISE, CONTRACTOR SHALL PROVIDE FLAT, RIDGE, OR VALLEY PLATES AT ALL LOCATIONS WHERE ROOF DECK CHANGES DIRECTION OR WHERE SLOPE EXCEEDS 1/2" PER FOOT. PLATES SHALL BE 20 GA MINIMUM, OR THE MATCH THICKNESS OF THE METAL DECK, WHICHEVER IS THICKER.</li> </ol>																																																																																																																																																																																																																																																																																																																																																																																																																	
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**COMPONENTS AND CLADDING WIND PRESSURE DIAGRAMS**



SCHMATIC ISOMETRIC VIEW



ROOF PLAN VIEW

ASCE 7-16 ROOF DESIGN PRESSURES FOR FLAT ROOFS WITH ROOF SLOPE $\theta < 7^\circ$ ( $\theta =$ ROOF SLOPE)					
TRIB AREA (SQ FT)	DESIGN WIND PRESSURE (PSF)				NET OVERHANG
	1	2	3	4	
10	+19.0 -42.7	+19.0 -74.3	+19.0 -98.0	+19.0 -133.6	+19.0 -126.4
20	+17.8 -42.7	+17.8 -69.4	+17.8 -91.7	+17.8 -121.0	+17.8 -111.7
50	+16.2 -42.7	+16.2 -62.9	+16.2 -83.4	+16.2 -104.3	+16.2 -92.3
100	+16.0 -42.7	+16.0 -58.0	+16.0 -77.1	+16.0 -91.7	+16.0 -77.6
200	+16.0 -36.7	+16.0 -53.1	+16.0 -70.8	+16.0 -79.1	+16.0 -62.9
350	+16.0 -31.9	+16.0 -49.2	+16.0 -65.7	+16.0 -68.9	+16.0 -51.0
500	+16.0 -28.9	+16.0 -46.6	+16.0 -62.4	+16.0 -62.4	+16.0 -43.5

- NOTES:
- WIND PRESSURES USED FOR THE DESIGN OF COMPONENTS AND CLADDING ARE SHOWN IN THE FOLLOWING TABLE. PRESSURES ARE CALCULATED FROM ASCE 7-16 AND ARE ULTIMATE, FACTORED LOADS. FOR ALLOWABLE LOAD PRESSURES, REFER TO THE LOAD COMBINATIONS LISTED IN ASCE 7-16 FOR APPROPRIATE REDUCTIONS.
  - COMPONENT AND CLADDING PRESSURES ACT NORMAL TO THE SURFACE. POSITIVE PRESSURES ACT TOWARDS THE SURFACE AND NEGATIVE PRESSURES ACT AWAY FROM THE SURFACE.
  - DESIGN PRESSURE FOR COMPONENTS AND CLADDING SHALL NOT BE LESS THAN 16 PSF ACTING IN EITHER DIRECTION NORMAL TO THE SURFACE. THE EFFECTIVE WIND AREA IS THE SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN ONE-THIRD THE SPAN LENGTH. FOR CLADDING FASTENERS, THE EFFECTIVE WIND AREA SHALL NOT BE GREATER THAN THE AREA THAT IS TRIBUTARY TO AN INDIVIDUAL FASTENER.
  - OVERHANG SOFFIT PRESSURES SHALL BE EQUAL TO THE ADJACENT WALL PRESSURE.
  - h = 30 FT
  - a = 18 FT

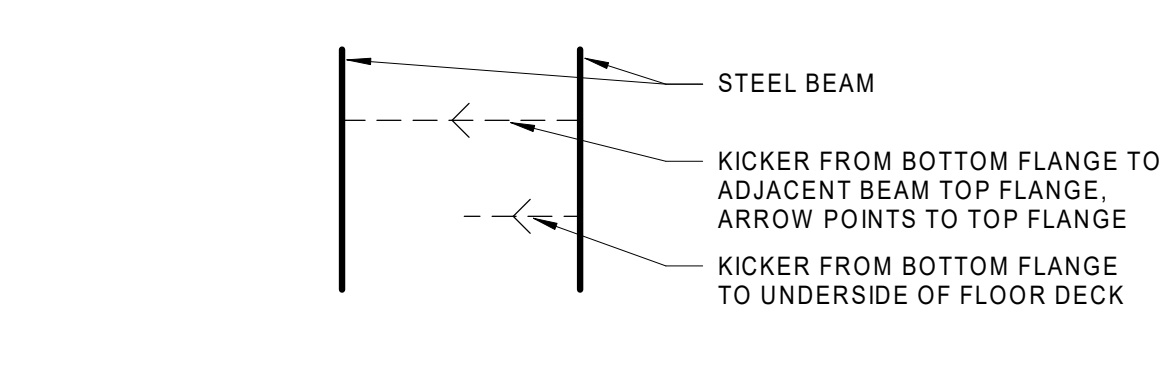
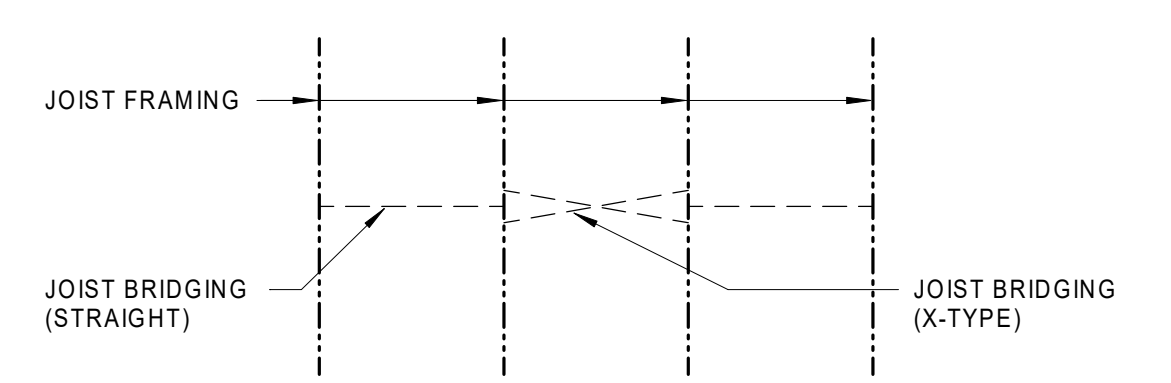
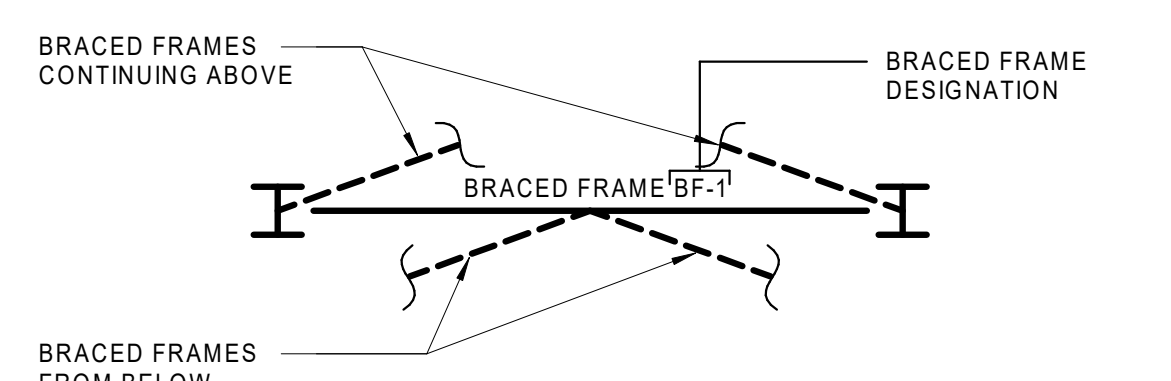
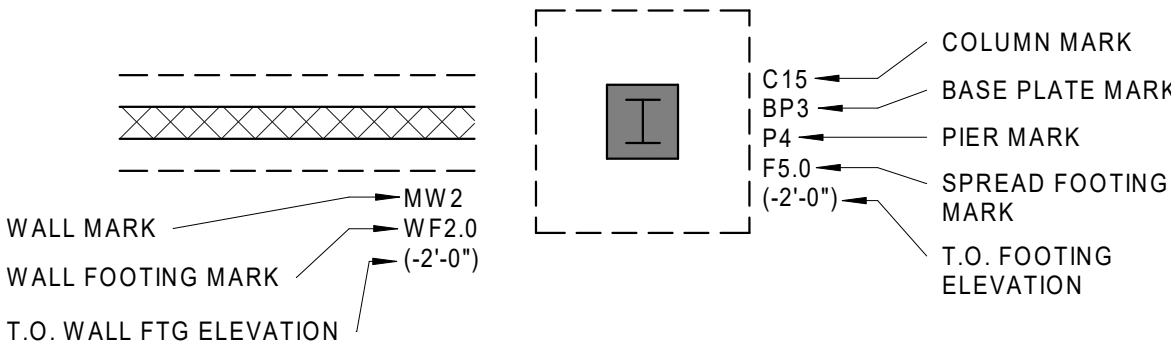
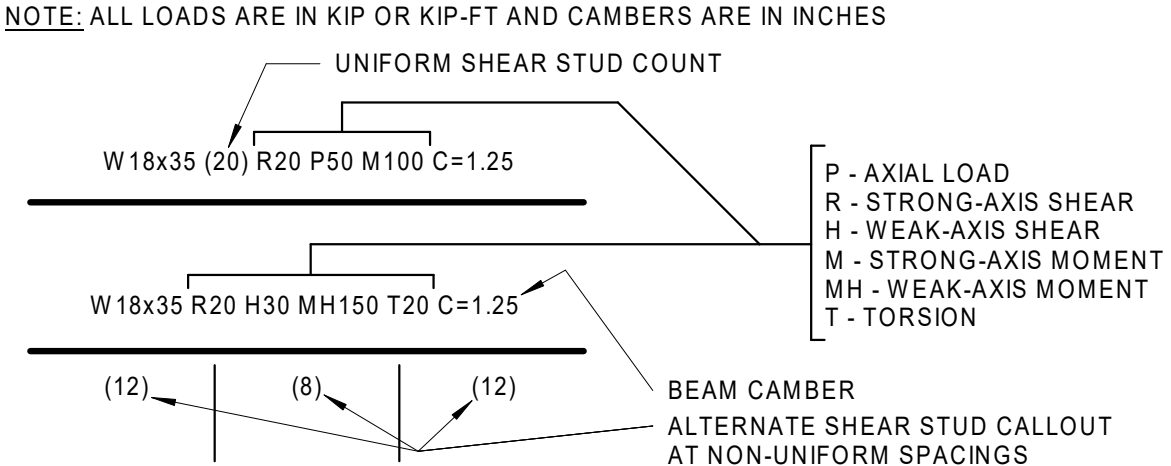
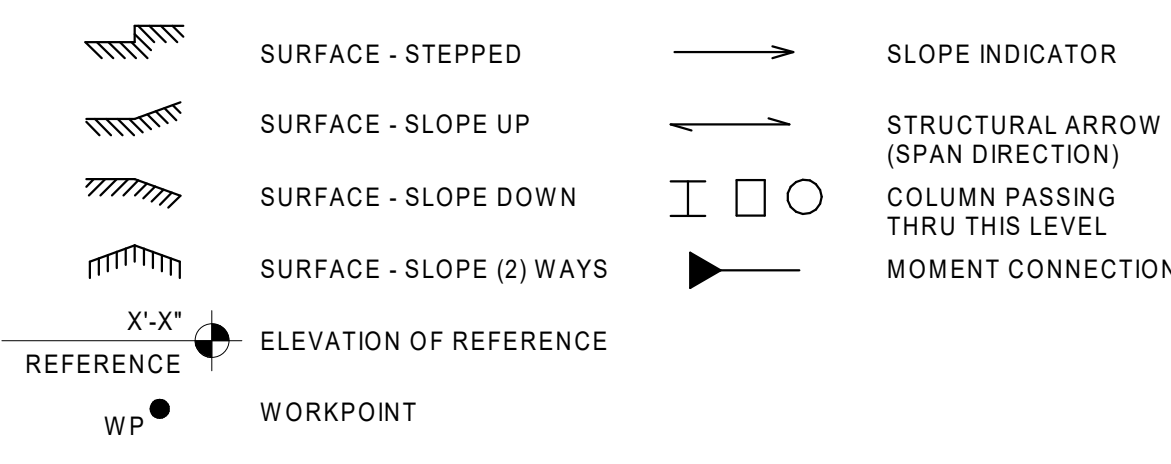
ASCE 7-16 WALL DESIGN PRESSURES		
TRIB AREA (SQ FT)	WIND PRESSURE AND SUCTION (PSF)	
	4	5
10	+42.7 -46.2	+42.7 -56.9
20	+40.8 -44.3	+40.8 -53.1
50	+38.3 -41.8	+38.3 -48.1
100	+36.4 -40.0	+36.4 -44.3
200	+34.5 -38.1	+34.5 -40.6
500	+32.0 -35.6	+32.0 -35.6

**ABBREVIATIONS**

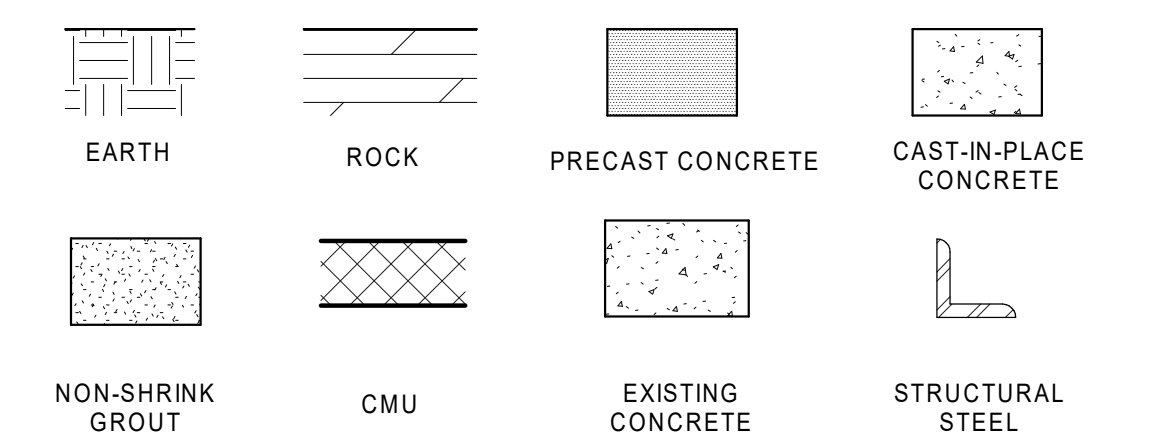
(ALL ABBREVIATIONS/SYMBOLS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS)

- |                |                                 |                 |   |                          |   |  |               |               |                      |                               |               |   |                              |                                |                 |               |           |                       |            |               |              |                 |                         |                    |                                |          |                   |                  |               |                                |           |                           |              |            |               |                 |                     |                 |                  |                  |            |               |                         |            |                          |            |                 |            |              |                        |               |         |          |             |         |              |                    |              |                           |               |                        |                  |          |                 |              |           |                |               |                        |               |                |                      |                              |             |                |            |                     |                   |                          |             |              |             |            |                 |               |                 |               |                       |             |                 |                  |         |                 |                  |               |                        |                             |           |                              |                    |                |           |                |                  |                          |          |        |              |              |                          |                          |                |                       |                |                            |                         |                       |                    |              |           |                          |                                 |                                   |                        |                          |             |               |             |                 |                |           |                   |                  |             |                    |                    |                          |           |         |                   |              |                     |             |              |                  |                            |              |                     |                 |                       |              |              |               |                    |                              |            |                      |                           |                           |                               |          |                            |               |                      |                    |               |                            |                            |                                       |              |               |                        |                              |               |                                 |               |               |              |                  |                    |                |                   |                  |                   |                          |                         |              |                |           |             |                           |           |                              |            |                   |             |                       |           |                    |                                  |                                    |              |                 |               |           |                              |                |                  |            |                          |       |                       |                      |                |           |              |               |                     |                    |                       |                  |           |             |                               |                            |               |                     |         |         |           |             |                |               |               |           |                               |                 |                         |
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| AB ANCHOR BOLT | ACI AMERICAN CONCRETE INSTITUTE | ADDL ADDITIONAL | AESS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL | AFF ABOVE FINISHED FLOOR | AISC AMERICAN INSTITUTE OF STEEL CONSTRUCTION | AISI AMERICAN IRON AND STEEL INSTITUTE | ALUM ALUMINUM | ALT ALTERNATE | APPROX APPROXIMATELY | ARCH ARCHITECT, ARCHITECTURAL | ASSY ASSEMBLY | ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS | AWS AMERICAN WELDING SOCIETY | B/, B/O BOTTOM OF BRACED FRAME | BF BRACED FRAME | BLDG BUILDING | BLK BLOCK | BM BEAM OR BENCH MARK | BOT BOTTOM | BP BASE PLATE | BTWN BETWEEN | C CANT, CANTILE | CANT, CANTIL CANTILEVER | CF CUBIC FOOT/FEET | CFSF COLD FORMED STEEL FRAMING | CH CHORD | CIP CAST-IN-PLACE | CJ CONTROL JOINT | CL CENTERLINE | CJP COMPLETE JOINT PENETRATION | CLR CLEAR | CMU CONCRETE MASONRY UNIT | CO CLEAN OUT | COL COLUMN | CONC CONCRETE | CONN CONNECTION | CONSTR CONSTRUCTION | CONT CONTINUOUS | CONTR CONTRACTOR | COORD COORDINATE | CTR CENTER | CY CUBIC YARD | DBA DEFORMED BAR ANCHOR | DBL DOUBLE | DCW DOUBLE CRITICAL WELD | DEG DEGREE | DEMO DEMOLITION | DET DETAIL | DIA DIAMETER | DIAG DIAGONAL, DIAGRAM | DIM DIMENSION | DN DOWN | DO DITTO | DWG DRAWING | EA EACH | EF EACH FACE | EJ EXPANSION JOINT | EL ELEVATION | ELEC ELECTRIC, ELECTRICAL | ELEV ELEVATOR | EOR ENGINEER OF RECORD | EOS EDGE OF SLAB | EQ EQUAL | EQUIP EQUIPMENT | EST ESTIMATE | EW EA WAY | EXIST EXISTING | EXP EXPANSION | EXT EXTERIOR, EXTERNAL | FAB FABRICATE | FD FLOOR DRAIN | FDN, FDTN FOUNDATION | FFE FINISHED FLOOR ELEVATION | FF FAR FACE | FIN FINISH(ED) | FLG FLANGE | FLR FLOOR, FLOORING | FM FACTORY MUTUAL | FP FULL PENETRATION WELD | FS FAR SIDE | FT FOOT/FEET | FTG FOOTING | FUT FUTURE | FV FIELD VERIFY | GA GAGE/GAUGE | GALV GALVANIZED | GB GRADE BEAM | GC GENERAL CONTRACTOR | GEN GENERAL | GOVT GOVERNMENT | GR GROUND, GRADE | HK HOOK | HM HOLLOW METAL | HORIZ HORIZONTAL | HP HIGH POINT | HSA HEADED STUD ANCHOR | HSS HOLLOW STRUCTURAL STEEL | HT HEIGHT | HVAC HEATING VENT, AIR COND. | ID INSIDE DIAMETER | IF INSIDE FACE | IN INCHES | INCL INCLUDING | INFO INFORMATION | INT INTERIOR OR INTERNAL | JT JOINT | K KIPS | KB KWIK BOLT | KO KNOCK OUT | KSF KIPS PER SQUARE FOOT | KSI KIPS PER SQUARE INCH | LB(S) POUND(S) | Ld DEVELOPMENT LENGTH | LF LINEAR FEET | LLB LONG LEGS BACK TO BACK | LLH LONG LEG HORIZONTAL | LLV LONG LEG VERTICAL | LOA LENGTH OVERALL | LOC LOCATION | LONG LONG | LSH LONG SIDE HORIZONTAL | LSLP LONG-SLOTTED HOLE PARALLEL | LSLT LONG-SLOTTED HOLE TRANSVERSE | LSV LONG SIDE VERTICAL | LWC LIGHTWEIGHT CONCRETE | MAS MASONRY | MATL MATERIAL | MAX MAXIMUM | MECH MECHANICAL | MEZZ MEZZANINE | MTL METAL | MFG MANUFACTURING | MFR MANUFACTURER | MIN MINIMUM | MISC MISCELLANEOUS | MO MASONRY OPENING | MOD MODIFY, MODIFICATION | MTL METAL | N NORTH | NA NOT APPLICABLE | NF NEAR FACE | NIC NOT IN CONTRACT | NOM NOMINAL | NS NEAR SIDE | NTS NOT TO SCALE | NWC NORMAL-WEIGHT CONCRETE | OC ON CENTER | OD OUTSIDE DIAMETER | OF OUTSIDE FACE | OH, OPH OPPOSITE HAND | OPNG OPENING | OPP OPPOSITE | ORIG ORIGINAL | OVS OVERSIZED HOLE | PAF POWDER ACTUATED FASTENER | PC PRECAST | PCC PRECAST CONCRETE | PCF POUNDS PER CUBIC FOOT | PCY POUNDS PER CUBIC YARD | PJP PARTIAL JOINT PENETRATION | PL PLATE | PLF POUNDS PER LINEAR FOOT | PLYWD PLYWOOD | PREFAB PREFABRICATED | PRELIM PRELIMINARY | PROP PROPERTY | PSF POUNDS PER SQUARE FOOT | PSI POUNDS PER SQUARE INCH | PT PRESSURE TREATED, POST-TENSION(ED) | QTY QUANTITY | R, RAD RADIUS | RC REINFORCED CONCRETE | RCP REINFORCED CONCRETE PIPE | REF REFERENCE | REINF REINFORCED, REINFORCEMENT | REM REMAINDER | REQD REQUIRED | REV REVISION | RO ROUGH OPENING | RP REFERENCE POINT | RS ROCK SOCKET | RTU ROOF TOP UNIT | SC SLIP CRITICAL | SCHED SCHEDULE(D) | SDI STEEL DECK INSTITUTE | SDS SELF-DRILLING SCREW | SECT SECTION | SF SQUARE FEET | SHT SHEET | SIM SIMILAR | SJI STEEL JOINT INSTITUTE | SK SKETCH | SLBB SHORT LEGS BACK TO BACK | SLV SLEEVE | SOG SLAB ON GRADE | SPA SPACING | SPEC SPECIFICATION(S) | SQ SQUARE | SS STAINLESS STEEL | SSLP SHORT-SLOTTED HOLE PARALLEL | SSLT SHORT-SLOTTED HOLE TRANSVERSE | STD STANDARD | STIFF STIFFENER | STIRR STIRRUP | STL STEEL | STRUCT STRUCTURE, STRUCTURAL | SUSP SUSPENDED | SYMM SYMMETRICAL | SYS SYSTEM | SW SHORT WAY, SHEAR WALL | T TOP | T&G TONGUE AND GROOVE | TBD TO BE DETERMINED | TEMP TEMPORARY | THK THICK | THRU THROUGH | T/ T/O TOP OF | TOC TOP OF CONCRETE | TOM TOP OF MASONRY | TOS TOP OF STEEL/SLAB | TRANS TRANSVERSE | TRD TREAD | TYP TYPICAL | UL UNDERWRITER'S LABORATORIES | UNO UNLESS NOTED OTHERWISE | VERT VERTICAL | VIF VERIFY IN FIELD | W WIDTH | W/ WITH | WOOD WOOD | W/O WITHOUT | WF WIDE FLANGE | WP WORK POINT | WS WATER STOP | WT WEIGHT | WWR WELDED WIRE REINFORCEMENT | XS EXTRA STRONG | XXS DOUBLE EXTRA STRONG |
|----------------|---------------------------------|-----------------|---|--------------------------|---|--|---------------|---------------|----------------------|-------------------------------|---------------|---|------------------------------|--------------------------------|-----------------|---------------|-----------|-----------------------|------------|---------------|--------------|-----------------|-------------------------|--------------------|--------------------------------|----------|-------------------|------------------|---------------|--------------------------------|-----------|---------------------------|--------------|------------|---------------|-----------------|---------------------|-----------------|------------------|------------------|------------|---------------|-------------------------|------------|--------------------------|------------|-----------------|------------|--------------|------------------------|---------------|---------|----------|-------------|---------|--------------|--------------------|--------------|---------------------------|---------------|------------------------|------------------|----------|-----------------|--------------|-----------|----------------|---------------|------------------------|---------------|----------------|----------------------|------------------------------|-------------|----------------|------------|---------------------|-------------------|--------------------------|-------------|--------------|-------------|------------|-----------------|---------------|-----------------|---------------|-----------------------|-------------|-----------------|------------------|---------|-----------------|------------------|---------------|------------------------|-----------------------------|-----------|------------------------------|--------------------|----------------|-----------|----------------|------------------|--------------------------|----------|--------|--------------|--------------|--------------------------|--------------------------|----------------|-----------------------|----------------|----------------------------|-------------------------|-----------------------|--------------------|--------------|-----------|--------------------------|---------------------------------|-----------------------------------|------------------------|--------------------------|-------------|---------------|-------------|-----------------|----------------|-----------|-------------------|------------------|-------------|--------------------|--------------------|--------------------------|-----------|---------|-------------------|--------------|---------------------|-------------|--------------|------------------|----------------------------|--------------|---------------------|-----------------|-----------------------|--------------|--------------|---------------|--------------------|------------------------------|------------|----------------------|---------------------------|---------------------------|-------------------------------|----------|----------------------------|---------------|----------------------|--------------------|---------------|----------------------------|----------------------------|---------------------------------------|--------------|---------------|------------------------|------------------------------|---------------|---------------------------------|---------------|---------------|--------------|------------------|--------------------|----------------|-------------------|------------------|-------------------|--------------------------|-------------------------|--------------|----------------|-----------|-------------|---------------------------|-----------|------------------------------|------------|-------------------|-------------|-----------------------|-----------|--------------------|----------------------------------|------------------------------------|--------------|-----------------|---------------|-----------|------------------------------|----------------|------------------|------------|--------------------------|-------|-----------------------|----------------------|----------------|-----------|--------------|---------------|---------------------|--------------------|-----------------------|------------------|-----------|-------------|-------------------------------|----------------------------|---------------|---------------------|---------|---------|-----------|-------------|----------------|---------------|---------------|-----------|-------------------------------|-----------------|-------------------------|

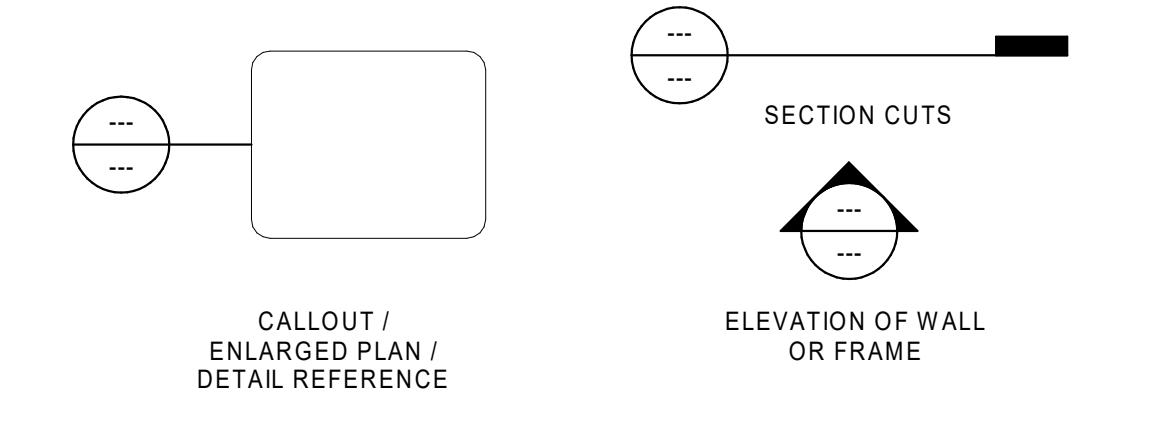
**STRUCTURAL SYMBOLS**



**MATERIAL GRAPHIC SYMBOLS**



**SHEET SYMBOLS**



**Jacobs**

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[CONSULTANT INFORMATION]

BY	APVD	A. WARGA
CHK	APVD	
DR	J. TULLER	
NO.	DATE	J. TULLER

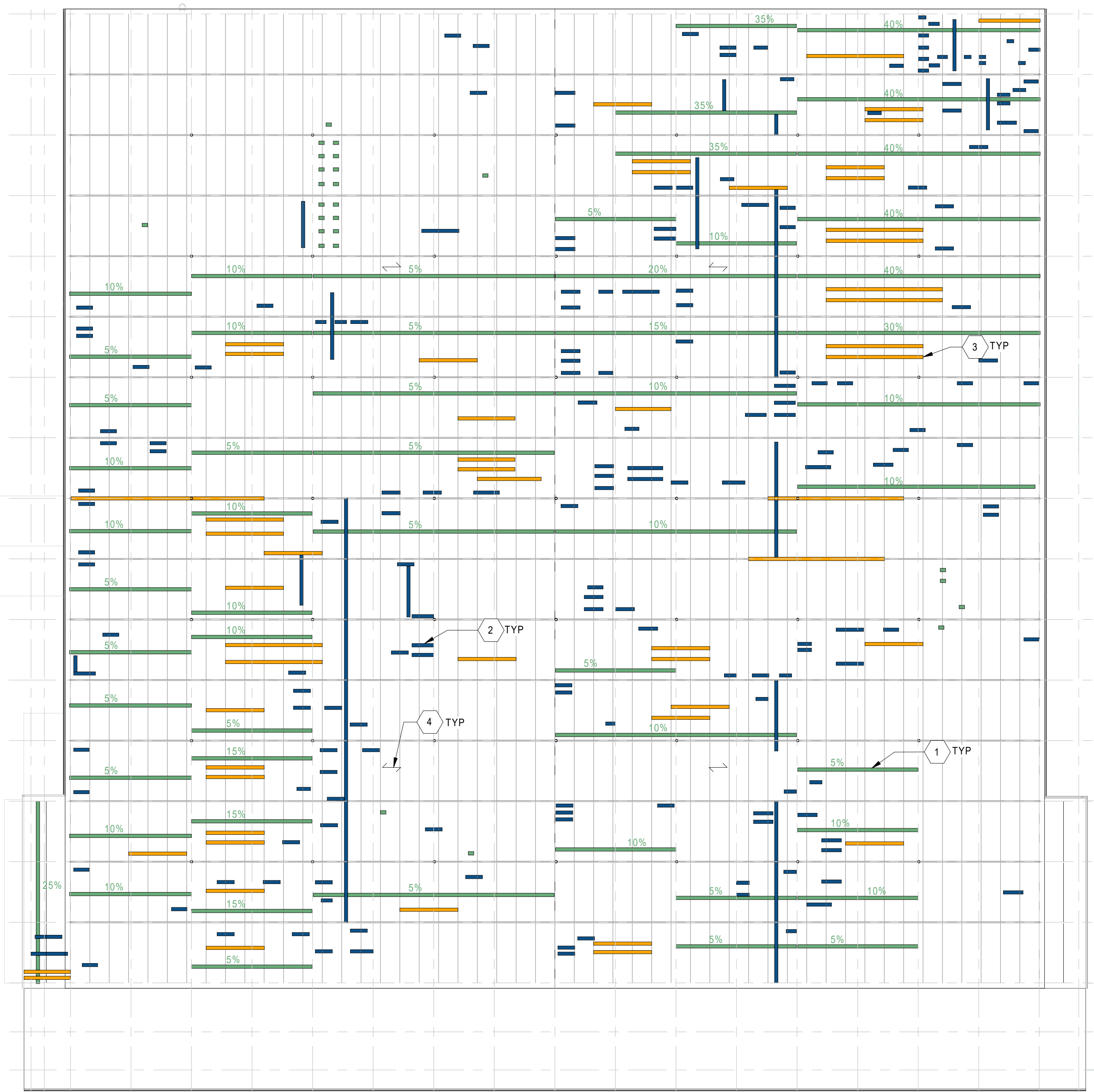


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Jacksonville, FL 32206

**JAXPORT RE-ROOF WIND PRESSURE SCHEDULE AND DIAGRAMS, SYMBOLS, AND ABBREVIATIONS**

Date: SEPTEMBER 2021  
Proj. No.: Project Number  
Drawing No.: S-002

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 17'



**1 ROOF LEVEL**  
SCALE: 1/32" = 1'-0"

### KEY NOTES

- TYPE 1 REPAIR, SEE DETAIL D6/S-501. REPAIRS NOTED ON PLAN IS THE ESTIMATED PERCENT OF AREA BETWEEN THE IMMEDIATE TRUE EAST/WEST (PLAN NORTH/SOUTH) GRIDLINES FOR THE DISTANCE INDICATED.
- TYPE 2 REPAIR, SEE DETAIL D4/S-501. REPAIRS NOTED SHALL BE MINIMUM (1) FULL TYPE B SHEET WIDE FOR A LENGTH APPROXIMATELY INDICATED ON PLAN. EXACT LENGTH TO BE VERIFIED IN FIELD.
- TYPE 3 REPAIR, SEE DETAIL D3/S-501. REPAIRS NOTED ARE FULL SHEET REPLACEMENTS FOR A MINIMUM 3-SPAN CONDITION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
- DECK SPAN DIRECTION ←

### SHEET NOTES

- NOTED REPAIR AREAS INDICATED ON THIS PLAN WERE IDENTIFIED FROM THE UNDERSIDE OF ROOF DECK. ADDITIONAL AREAS OF REPAIR MAY BE NECESSARY ONCE THE EXISTING ROOFING SYSTEM IS REMOVED AND TOP SIDE OF DECK IS REVEALED. CONTRACTOR TO INSPECT TOP SIDE OF DECK AND INDICATE ANY ADDITIONAL AREAS OF REPAIRS, OR CHANGES IN REPAIR TYPE (SEE NOTE 3).
- THE CONTRACTOR SHALL VERIFY EXISTING STEEL JOISTS AND FRAME, INDICATED ON PLAN OR OTHERWISE, MAINTAIN ADEQUATE STRUCTURAL SECTION PROPERTIES. EXCESSIVE CORROSION SHALL BE CLEANED AND REPAINTED, AT MINIMUM PER PAINT MANUFACTURERS REQUIREMENTS. THE CONTRACTOR SHALL SUBMIT A FORMAL RFI FOR REPAIR OR REPLACEMENT PROCEDURES FOR ANY SEVERELY CORRODED STEEL FRAMING ELEMENT WHERE MEASURED SECTION LOSS IS 25% OR MORE.
- THE CONTRACTOR SHALL SUBMIT A "REPAIR PLAN" SHOP DRAWING FOR REVIEW AND APPROVAL. THE SHOP DRAWING SHALL IDENTIFY ANY ADDITIONAL REPAIRS AND/OR CHANGES IN REPAIR TYPE TO THE METAL ROOF DECK, AS WELL AS INDICATE THE AREAS OF STRUCTURAL STEEL REPAIRS AS IDENTIFIED THROUGH THE RFI PROCESS. THE EOR SHALL MAINTAIN THE AUTHORITY TO APPROVE OR DENY A REPAIR BASED ON THE DOCUMENTED CONDITIONS BY THE CONTRACTOR.

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[CONSULTANT INFORMATION]

NO.	DATE	DR	CHK	APVD
		J. TULLER	A. WARGA	A. WARGA

NO.	DATE	DR	CHK	APVD
		J. TULLER	A. WARGA	A. WARGA



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Jacksonville, FL 32206

Project Title: **JAXPORT RE-ROOF**  
Roof Framing Plan

Date: SEPTEMBER 2021  
Proj. No.: Project Number  
Drawing No.: **S-201**

NO.	DATE	DR	CHK	REVISION	BY
		J. TULLER	J. TULLER		APVD
			A. WARGA		APVD
			A. WARGA		



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Jacksonville, FL 32206

Project Title:  
**JAXPORT RE-ROOF**

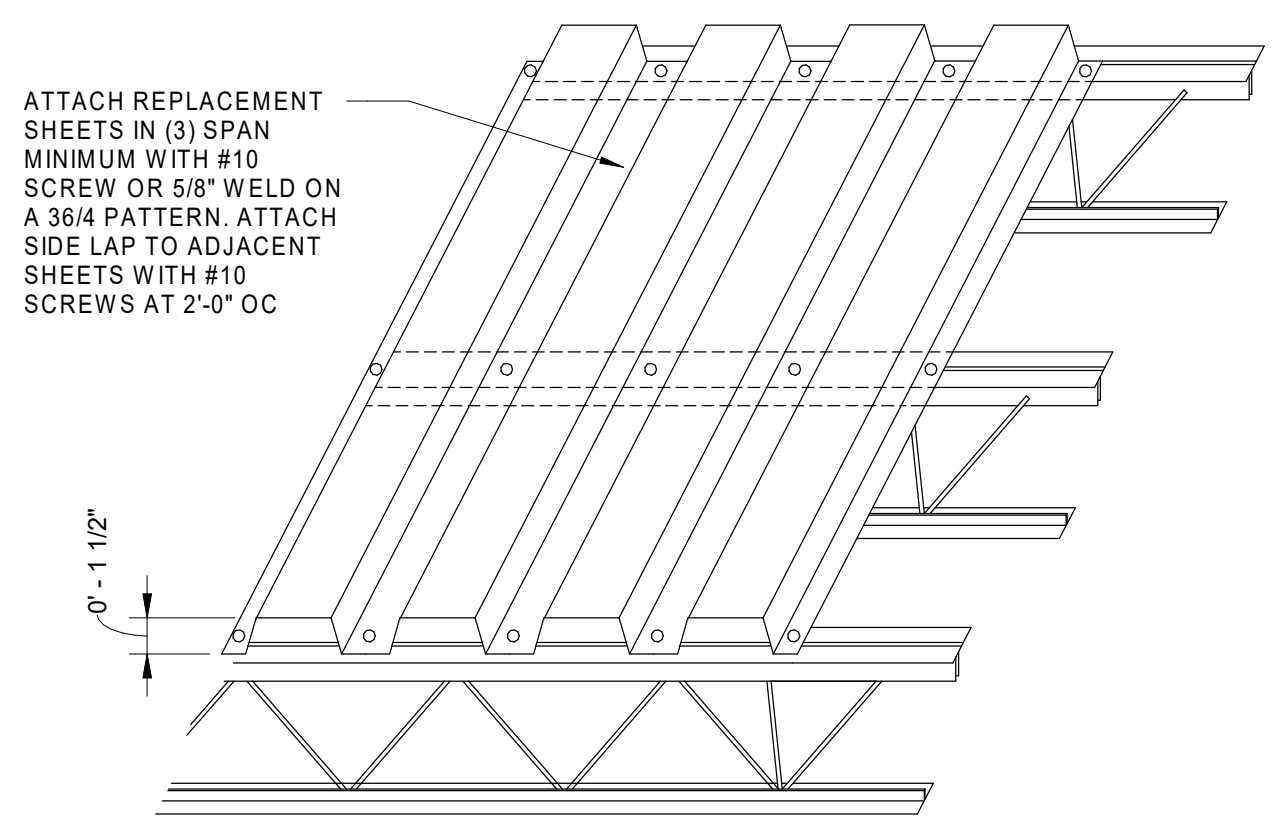
**SECTIONS AND DETAILS**

Date: SEPTEMBER 2021

Proj. No.: Project Number

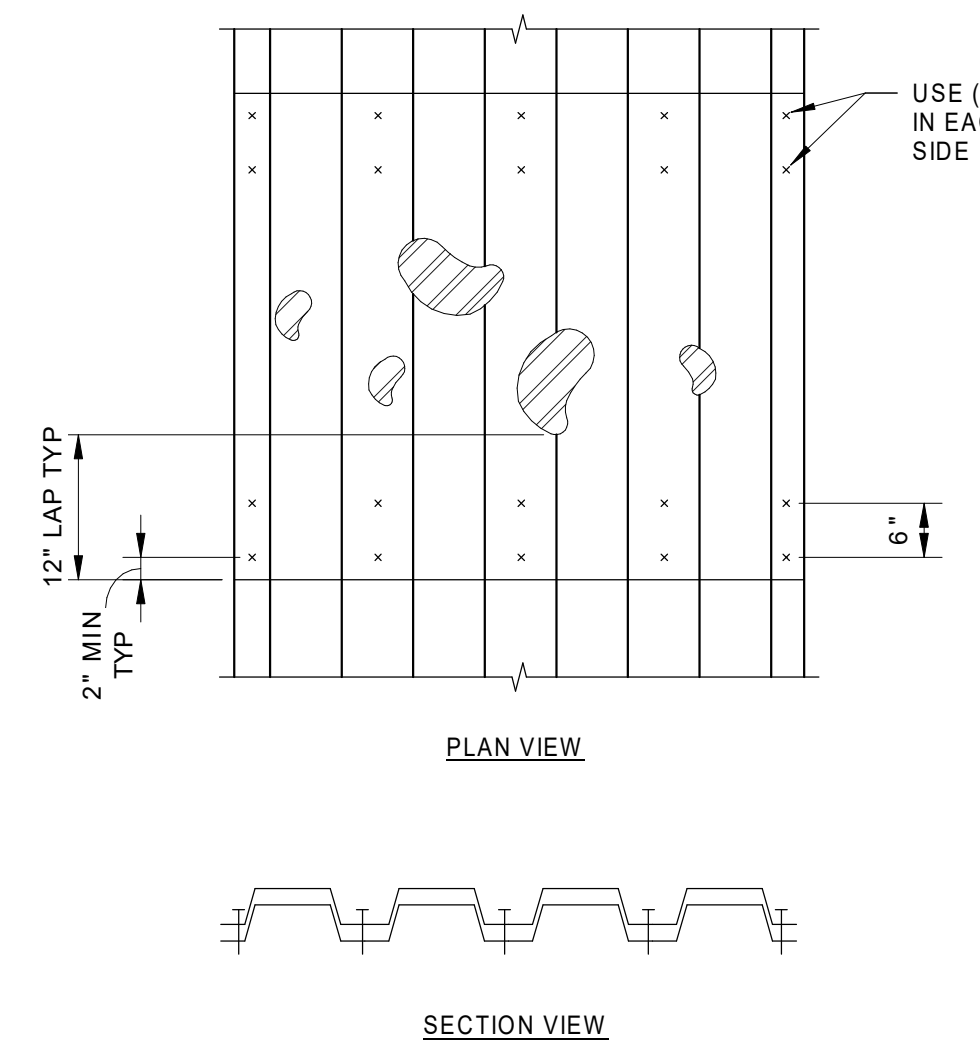
Drawing No.:

**S-501**



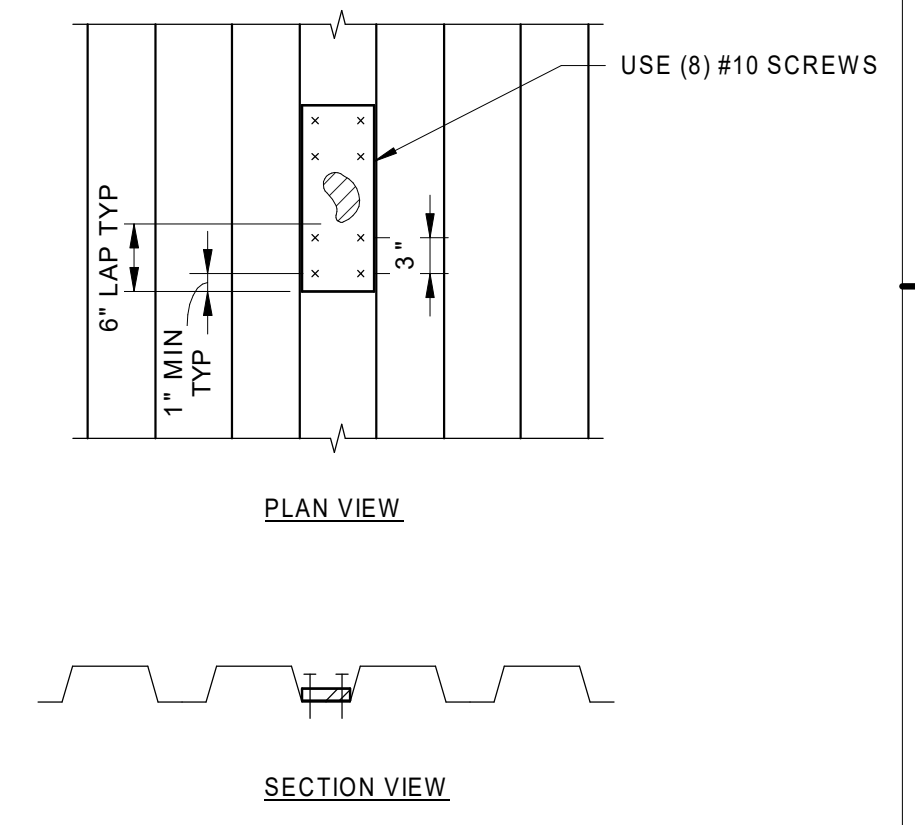
- NOTE:**
- SEE METAL DECK NOTES ON S-001 FOR DECK TYPE.
  - CONTRACTOR TO TAKE CARE NOT TO DAMAGE EXISTING STRUCTURE WHEN REMOVING EXISTING SHEET TO BE REPLACED.
  - ENSURE POSITIVE ATTACHMENT OF EXISTING ADJACENT PANELS TO REMAIN.

**D3 TYPE 3 - FULL SHEET DECK REPAIR**  
SCALE: 1 1/2" = 1'-0"



- NOTE:**
- SEE METAL DECK NOTES ON S-001 FOR DECK TYPE.
  - A FULL WIDTH SECTION OF ROOF DECK (3'-0) CUT TO LENGTH FROM A FULL SHEET AND LAID OVER A LARGER AREA OF CORROSION WHERE SECTION LOSS HAS OCCURRED.

**D4 TYPE 2 - DECK REPAIR**  
SCALE: 1 1/2" = 1'-0"



- NOTE:**
- USE 20 GA PLATE TO ATTACH TO EXISTING DECK.
  - PLATE TO SIT WITHIN DECK FLUTES TO COVER SMALLER AREA OF CORROSION WHERE SECTION LOSS HAS OCCURRED. IT IS ANTICIPATED THAT THESE REPAIRS OCCUR AT THE EXISTING VENT HOLE LOCATIONS AS NECESSARY.

**D6 TYPE 1 - DECK REPAIR**  
SCALE: 1 1/2" = 1'-0"

1

2

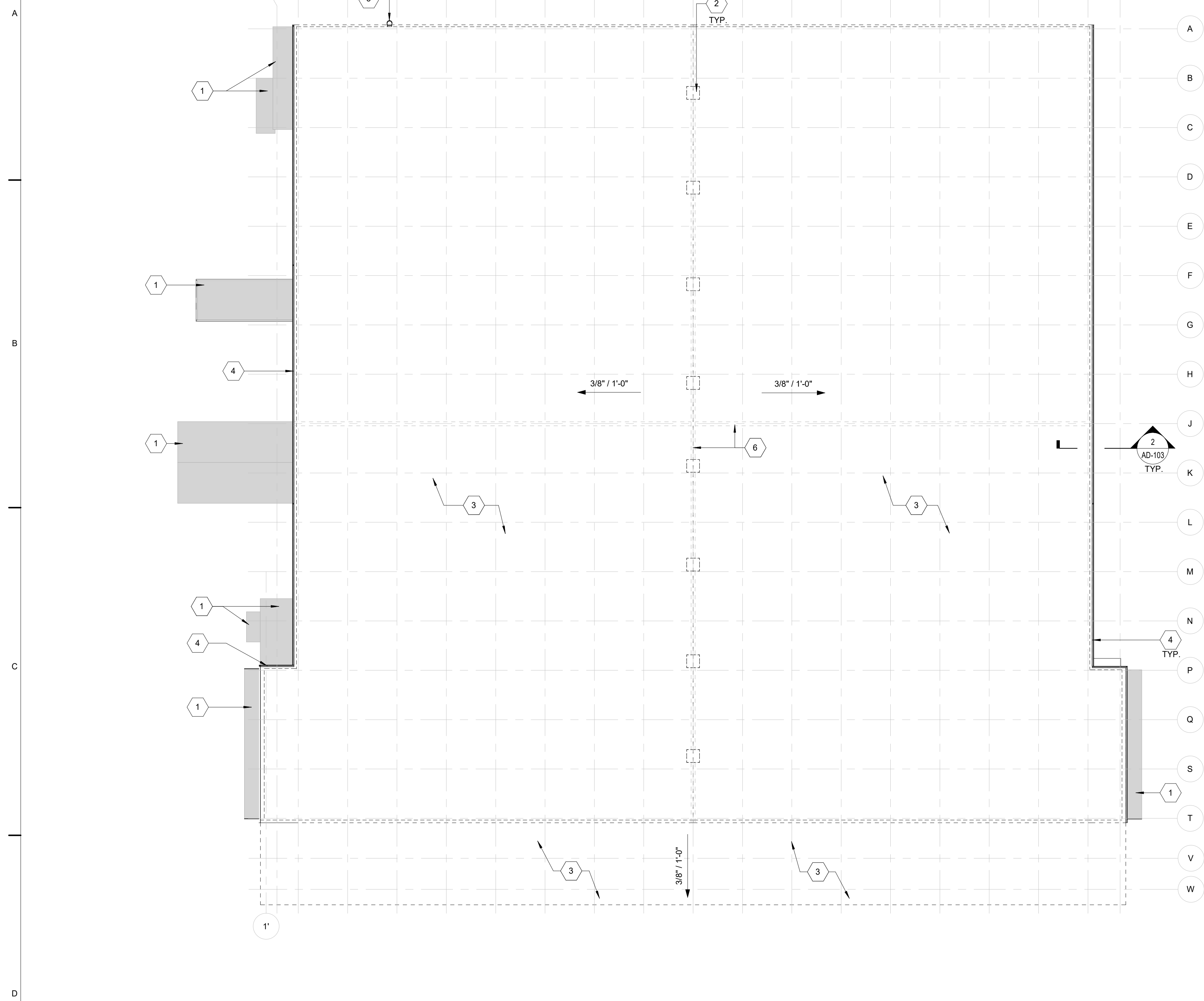
3

4

5

6

1A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 17'



**1 DEMOLITION ROOF PLAN**  
SCALE: 1/32" = 1'-0"

KEY NOTES	
1	ROOF NOT IN SCOPE OF WORK
2	REMOVE EXISTING MOTOR, ASSOCIATED SYSTEM COMPONENTS AND ROOF HOOD COVER. REFER TO SHEET AD-103 NOTES 4, 5 AND 6
3	REMOVE IN ITS ENTIRETY, EXISTING AGGREGATE SURFACE MEMBRANE ROOFING SYSTEM AND FLASHING DOWN TO EXISTING METAL DECK. REFER TO DETAIL 2 / AD-103 FOR LAYERS TO BE REMOVED THROUGHOUT THE ROOF
4	REMOVE EXISTING GUTTER AND DOWNSPOUT SYSTEM
5	REMOVE EXISTING CAGED LADDER, PATCH AND REPAIR AREA OF REMOVED LADDER.
6	REMOVE EXISTING EXPANSION JOINT

SHEET NOTES	
1.	KEY NOTES ARE INDICATIVE OF BEING TYPICAL (TYP.) SIGNIFIES THE DETAIL OCCURS MORE THAN ONCE AND THE NOTE APPLIES TO ALL SIMILAR INSTANCES, UNLESS OTHERWISE NOTED.
2.	FOR SYMBOL CLARIFICATION REFER TO SHEET G-001.
3.	VERIFY ALL DIMENSIONS ON SITE.
4.	CONTRACTOR TO REPLACE EXISTING MOTOR (AND ASSOCIATED SYSTEM COMPONENTS) WITH LIKE AND KIND, TEST COMPONENTS (SUCH AS FAN, BELT / CHAIN DRIVES, ETC.) ARE IN WORKING ORDER. REPLACE AS NEEDED.
5.	CONTRACTOR TO REPLACE EXISTING ROOF HOOD COVER.
6.	VERIFY ALL ELECTRICAL COMPONENTS AND FAN CONTROLS AND WORKING AND OPERATIONAL. REPAIR AND REPLACE AS NEEDED.

PLAN LEGEND	
	ITEMS TO BE DEMOLISHED
	MOTORIZED VENTILATORS / FANS TO BE DEMOLISHED
	ROOF / AREAS NOT IN SCOPE

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NO.	DATE	DSGN	DR	BC	CHK	APVD	BY	APVD	KR

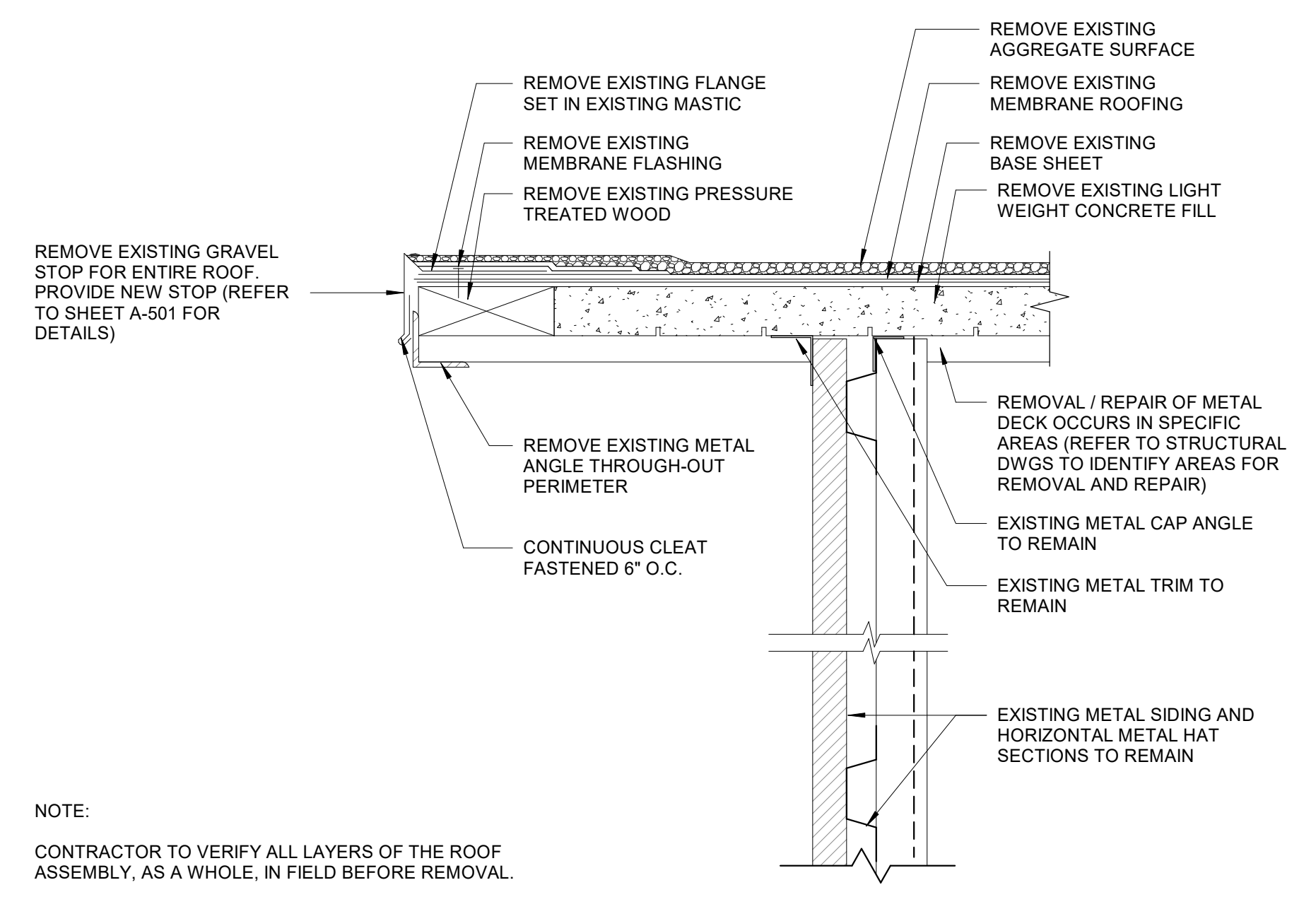
**JAXPORT**  
JACKSONVILLE PORT AUTHORITY

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Jacksonville, FL 32206

Project Title:  
**TALLEYRAND MARINE TERMINAL  
WAREHOUSE #1 RE-ROOF**

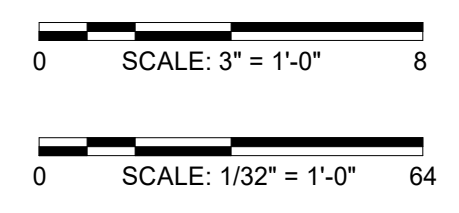
**DEMOLITION ROOF PLAN AND  
DETAIL**

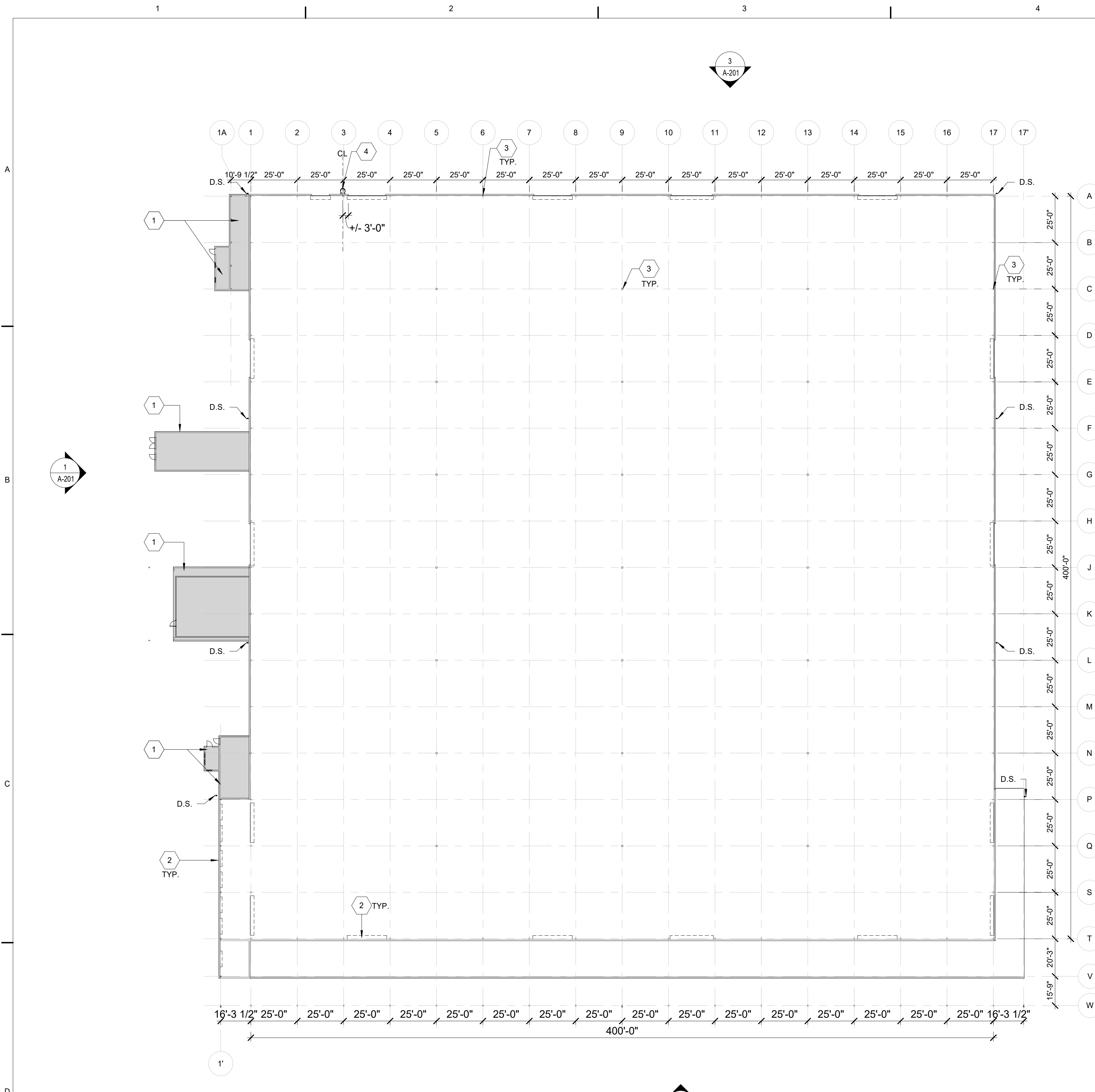
Date: SEPTEMBER 2021  
Proj. No.: EGXM2600  
Drawing No.: AD-103



NOTE:  
CONTRACTOR TO VERIFY ALL LAYERS OF THE ROOF ASSEMBLY, AS A WHOLE, IN FIELD BEFORE REMOVAL.

**2 TYPICAL DEMOLITION EDGE CONDITION**  
SCALE: 3" = 1'-0"





**KEY NOTES**

- NOT IN SCOPE OF WORK
- EXISTING OVERHEAD COIL DOORS TO REMAIN
- EXISTING STRUCTURE TO REMAIN
- NEW CAGED LADDER TO REPLACE EXISTING IN ASSIGNED LOCATION.


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**SHEET NOTES**

- KEY NOTES ARE INDICATIVE OF BEING TYPICAL (TYP.) SIGNIFIES THE DETAIL OCCURS MORE THAN ONCE AND THE NOTE APPLIES TO ALL SIMILAR INSTANCES, UNLESS OTHERWISE NOTED.
- VERIFY ALL DIMENSIONS IN FIELD.
- D.S. REPRESENT THE NEW DOWNSPOUTS AND LOCATIONS. REFER TO SHEET A-103 FOR CALCULATIONS SHEET A-501 DETAILS.

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**SHEET NOTES**

 ROOF / AREAS NOT IN SCOPE

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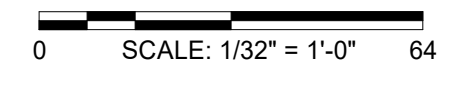
Project Title:  
**TALLEYRAND MARINE TERMINAL  
 WAREHOUSE #1 RE-ROOF**

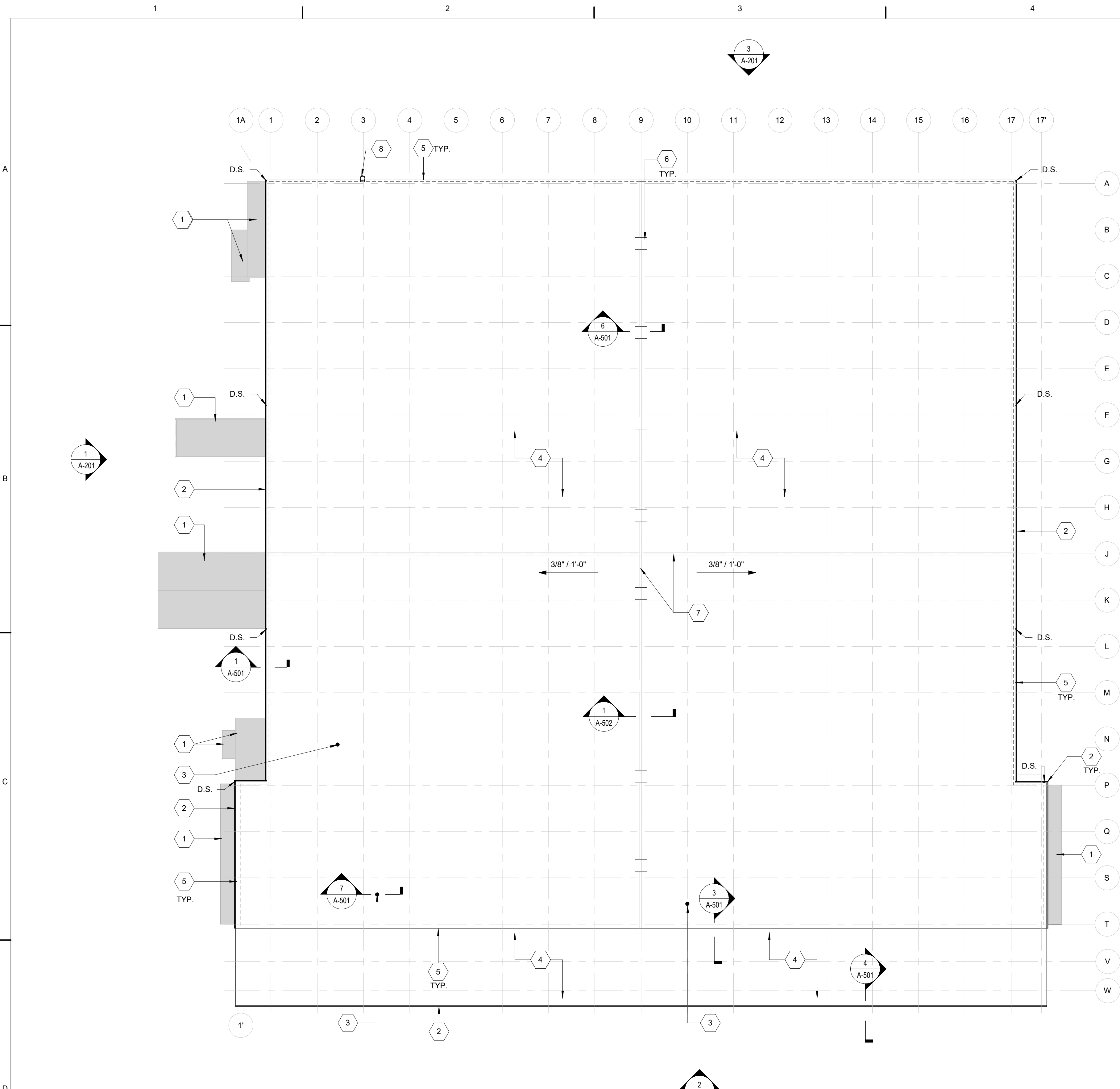
**OVERALL FLOOR PLAN**

Date: SEPTEMBER 2021  
 Proj. No.: EGXM2600  
 Drawing No.:

A-101

**1 OVERALL FLOOR PLAN**  
 SCALE: 1/32" = 1'-0"



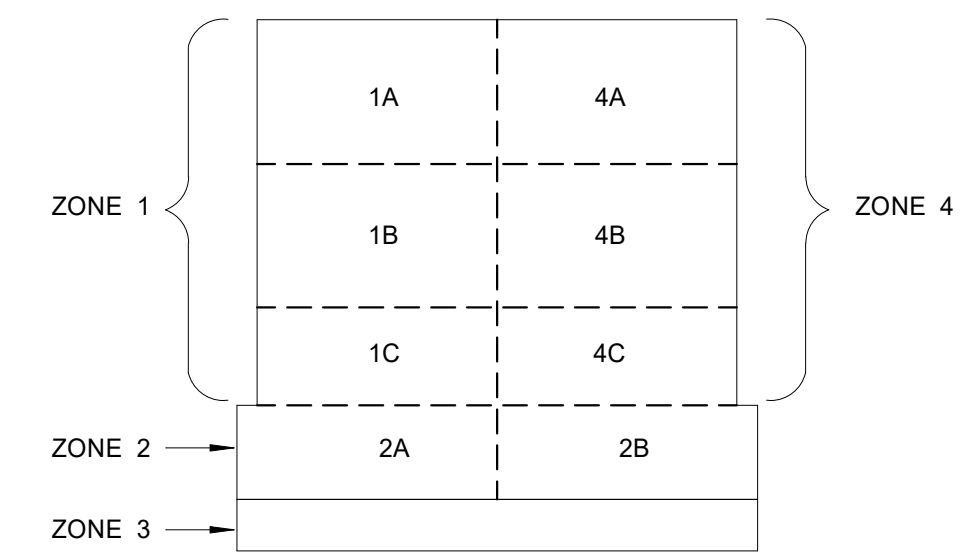


### GUTTERS AND DOWNSPOUTS SCHEDULE

100 YEAR IN. / HR APPROX.	ROOF SQ. FT.	GPM	# OF LEADERS	SQ. FT. FOR EACH LEADER	GPM LEADER CAPACITY	LEADER SIZE REQUIRED (IN) (PER FBC PLUMBING TABLE 1106.3)	GUTTER SIZE REQUIRED (IN) MINIMUM @ 1/2" SLOPE (PER FBC PLUMBING TABLE 1106.6)
4.3	AREA 1A = 24,622 SQ.FT. (LARGEST AREA FROM ZONE 1 WILL DETERMINE GUTTER / LEADER SIZE)	1,100 GPM	3	48 SQ. FT.	1208	6 X 8	REQUIRED 4 X 10 PROPOSED 8 X 5
	AREA 2A = 17,350 SQ.FT.	776 GPM	1	48 SQ. FT.	1208	6 X 8	
	AREA 2B = 17,350 SQ.FT.	776 GPM	1	48 SQ. FT.	1208	6 X 8	
	ZONE 3 = 9,109 SQ.FT.	407 / 3 = 136 GPM	3	13 SQ. FT.	192	3 X 4.25	5 X 6
	AREA 4A = 24,622 SQ.FT. (LARGEST AREA FROM ZONE 4 WILL DETERMINE GUTTER / LEADER SIZE)	1,100 GPM	3	48 SQ. FT.	1208	6 X 8	REQUIRED 4 X 10 PROPOSED 8 X 5

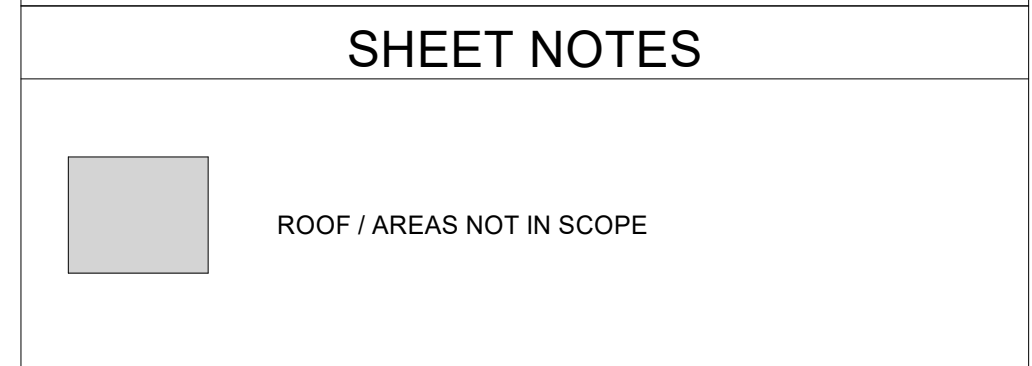
REFER TO FIGURE 103.1 FOR ZONE AND AREA IDENTIFICATION

FIGURE 103.1



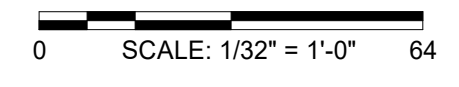
- #### KEY NOTES
- NOT IN SCOPE OF WORK
  - NEW GUTTER AND DOWNSPOUT SYSTEM
  - VENT THROUGH ROOF
  - NEW 3-PLY MODIFIED BITUMEN ROOFING SYSTEM - REFER TO SPECIFICATIONS AND DETAILS
  - PROVIDE NEW METAL FASCIA
  - NEW ROOF HOOD COVER
  - NEW EXPANSION JOINTS TO REPLACE EXISTING, REFER TO DETAIL 1/A-502
  - NEW CAGED LADDER TO REPLACE EXISTING, REFER TO FLOOR PLAN FOR NEW LOCATION

- #### SHEET NOTES
- KEY NOTES ARE INDICATIVE OF BEING TYPICAL (TYP.) SIGNIFIES THE DETAIL OCCURS MORE THAN ONCE AND THE NOTE APPLIES TO ALL SIMILAR INSTANCES, UNLESS OTHERWISE NOTED.
  - ALL PLUMBING VENT STACKS SHALL BE FLASHED. REFER TO DETAIL 3 ON SHEET A-501.
  - ALL EXISTING ROOF VENTILATORS / FANS SHALL BE REFLASHED REFER TO DETAIL 2 ON SHEET A-501.
  - FOR SYMBOL CLARIFICATION REFER TO SHEET G-001.
  - VERIFY ALL DIMENSIONS ON SITE.



# 1 ROOF PLAN

SCALE: 1/32" = 1'-0"



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2701 Talleyrand Ave.  
 Jacksonville, FL 32206

Project Title:  
**TALLEYRAND MARINE TERMINAL  
 WAREHOUSE #1 RE-ROOF**

**OVERALL ROOF PLAN**

Date: SEPTEMBER 2021  
 Proj. No.: EGXM2600  
 Drawing No.: A-103



KEYNOTES	
1	NOT IN SCOPE OF WORK
2	NEW 3-PLY MODIFIED BITUMEN ROOFING SYSTEM - REFER TO SPECIFICATIONS AND DETAILS
3	NEW GUTTER SYSTEM
4	NEW ROOF HOOD COVER
5	NEW CAGED LADDER TO REPLACE EXISTING, REFER TO FLOOR PLAN FOR NEW LOCATION
6	NEW DOWNSPOUT

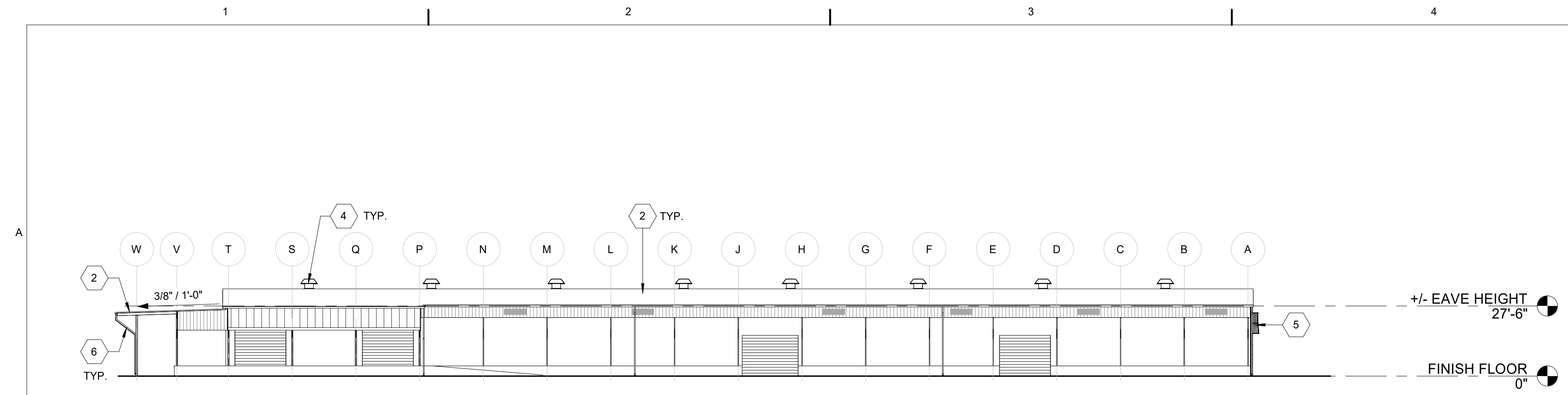
  

SHEET NOTES	
1.	KEY NOTES ARE INDICATIVE OF BEING TYPICAL (TYP.) SIGNIFIES THE DETAIL OCCURS MORE THAN ONCE AND THE NOTE APPLIES TO ALL SIMILAR INSTANCES, UNLESS OTHERWISE NOTED.
2.	VERIFY ALL DIMENSIONS IN FIELD.
3.	REFER TO SHEETD A-501 AND A-502 FOR DETAILS.

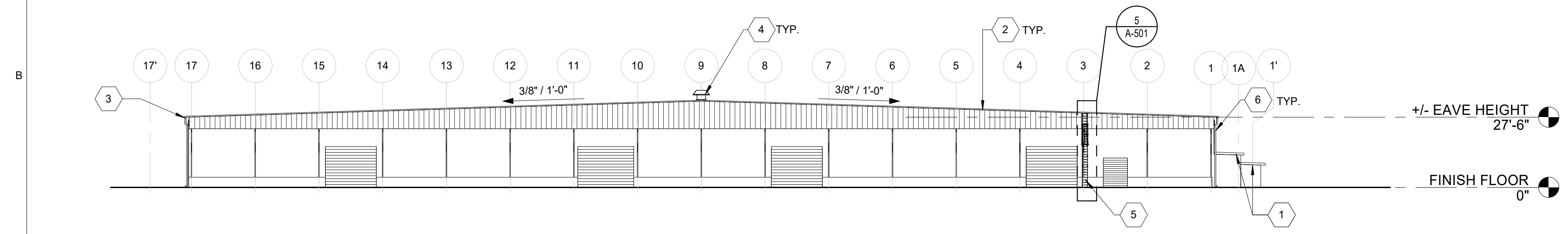
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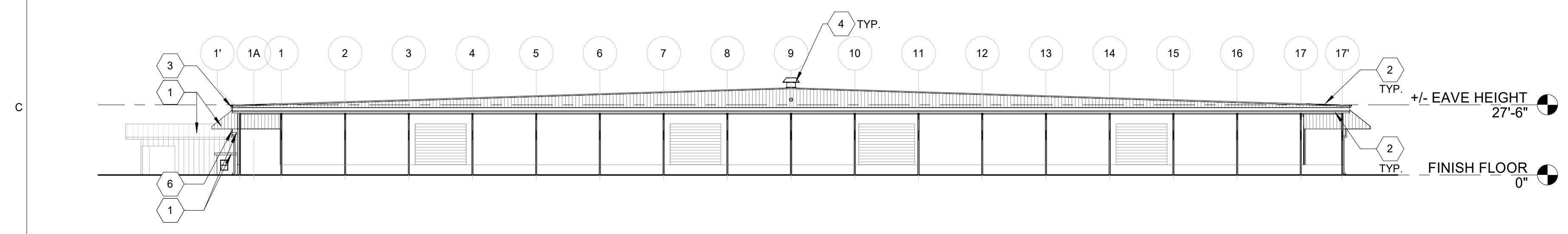
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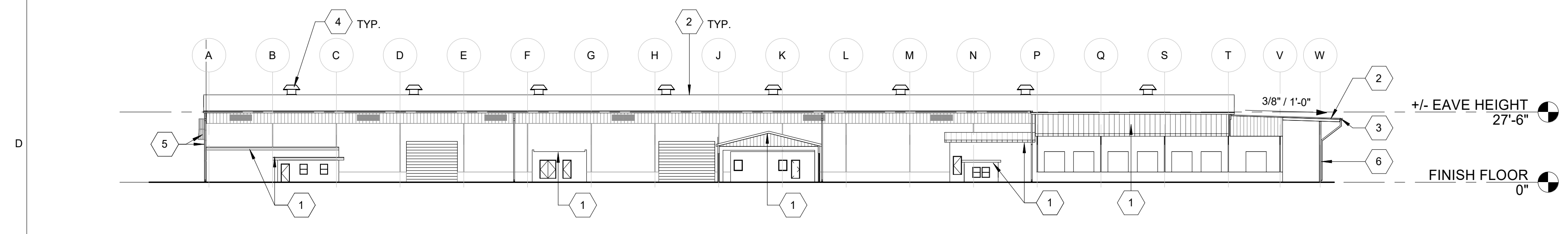
**4 SOUTH ELEVATION**  
SCALE: 1/32" = 1'-0"



**3 EAST ELEVATION**  
SCALE: 1/32" = 1'-0"



**2 WEST ELEVATION**  
SCALE: 1/32" = 1'-0"



**1 NORTH ELEVATION**  
SCALE: 1/32" = 1'-0"

NO.	DATE	DR	REVISION		BY
			CHK	APVD	



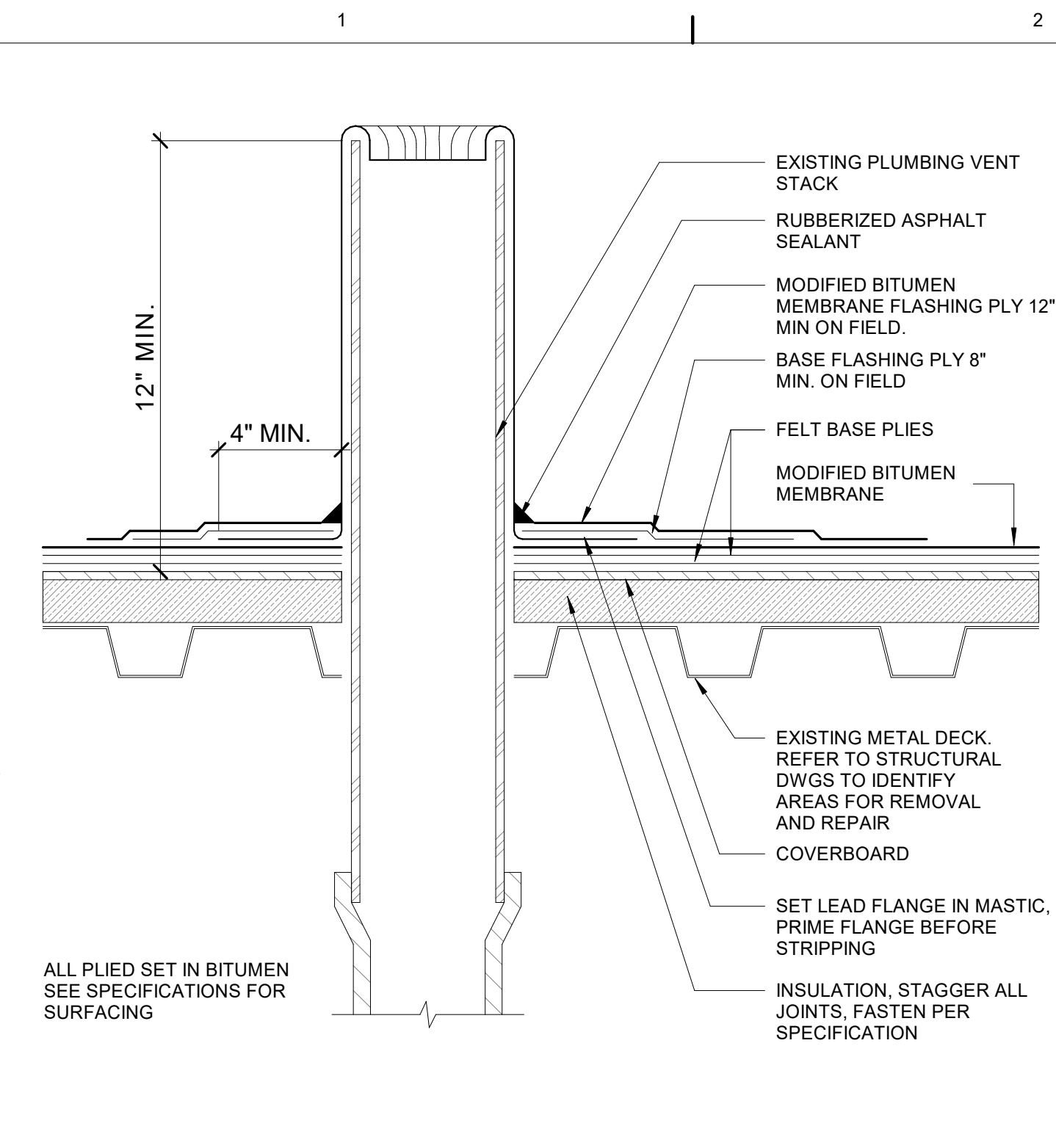
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WAREHOUSE #1 RE-ROOF**

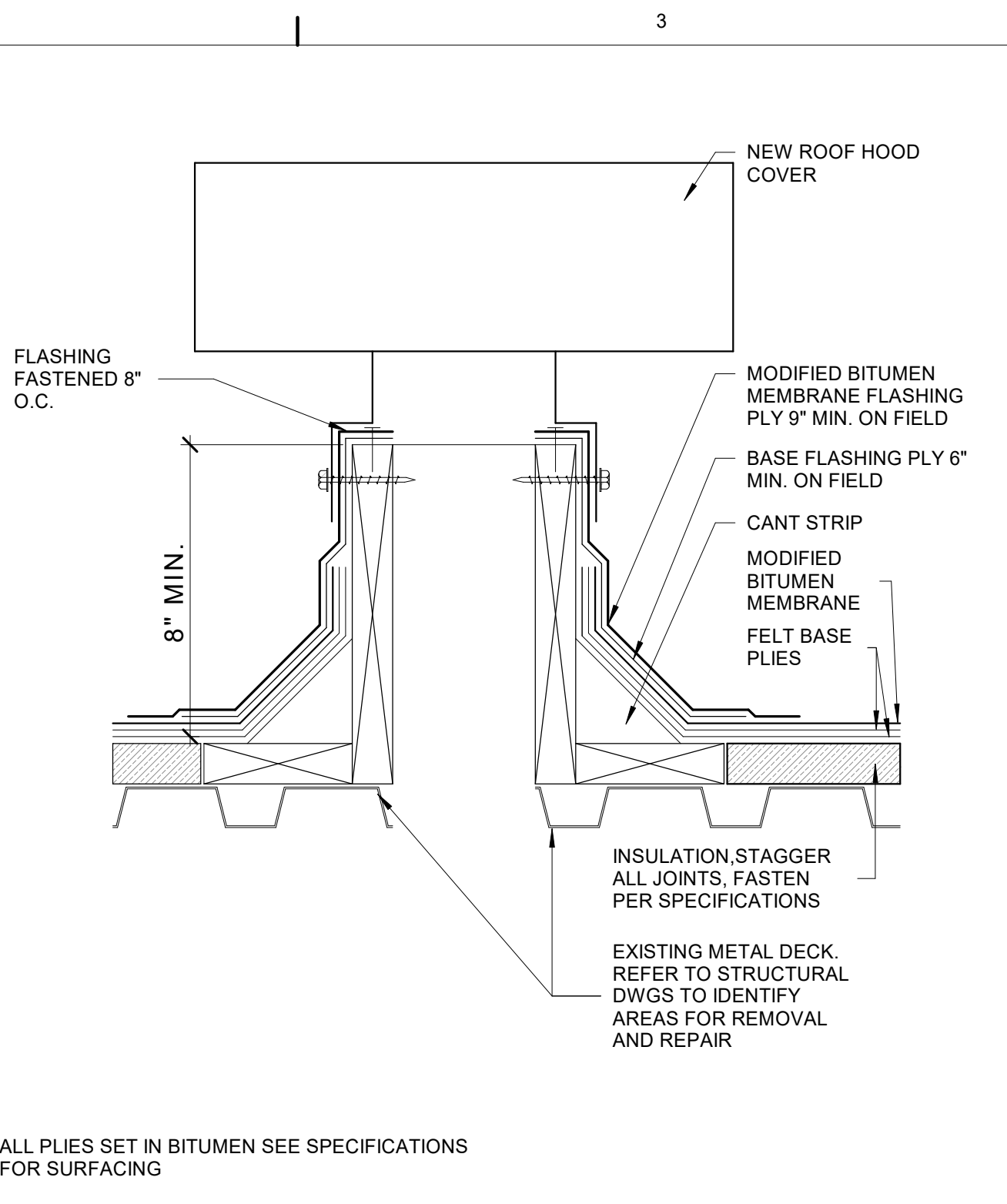
**BUILDING ELEVATIONS**

Date: SEPTEMBER 2021  
Proj. No.: EGXM2600  
Drawing No.:

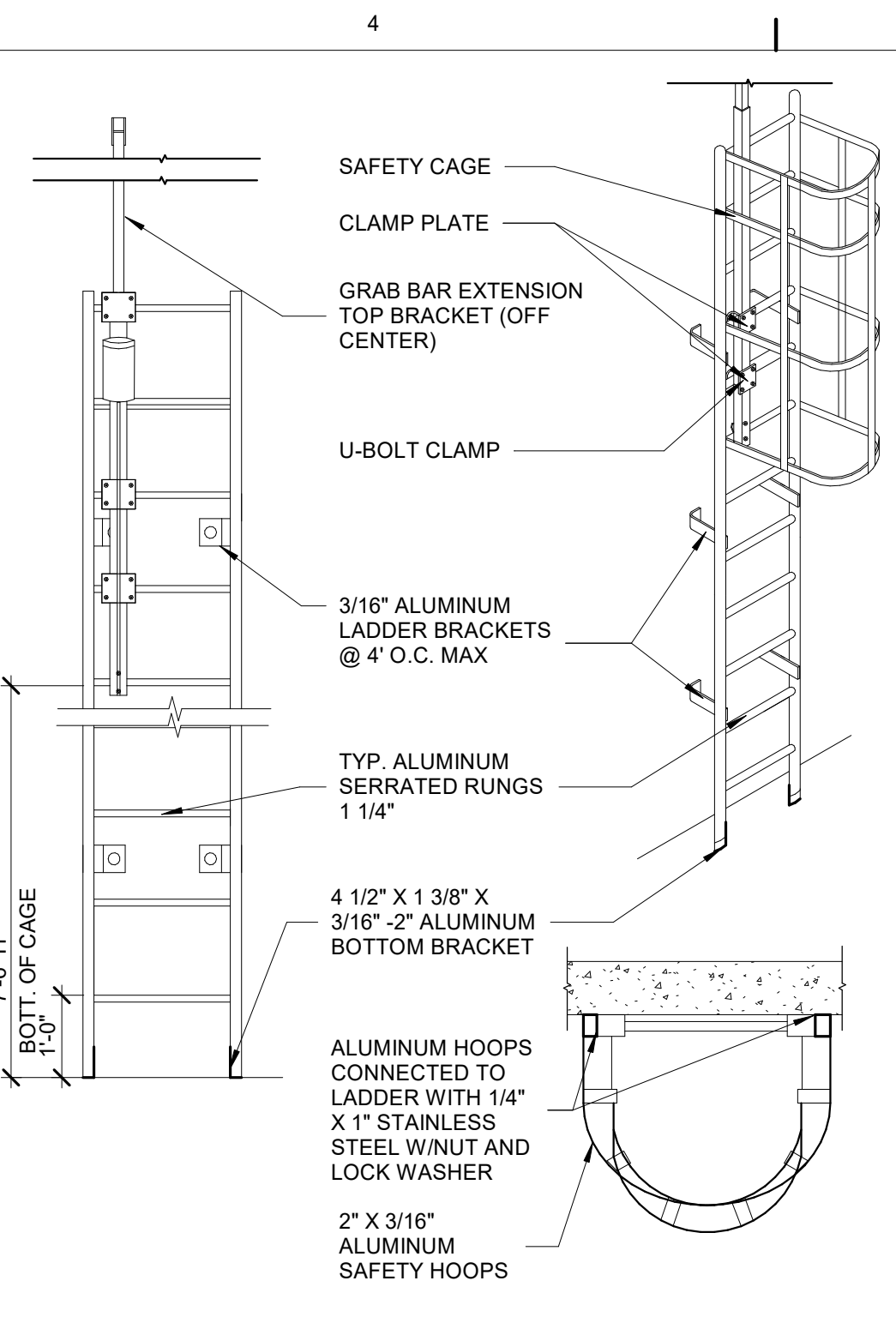
A-201



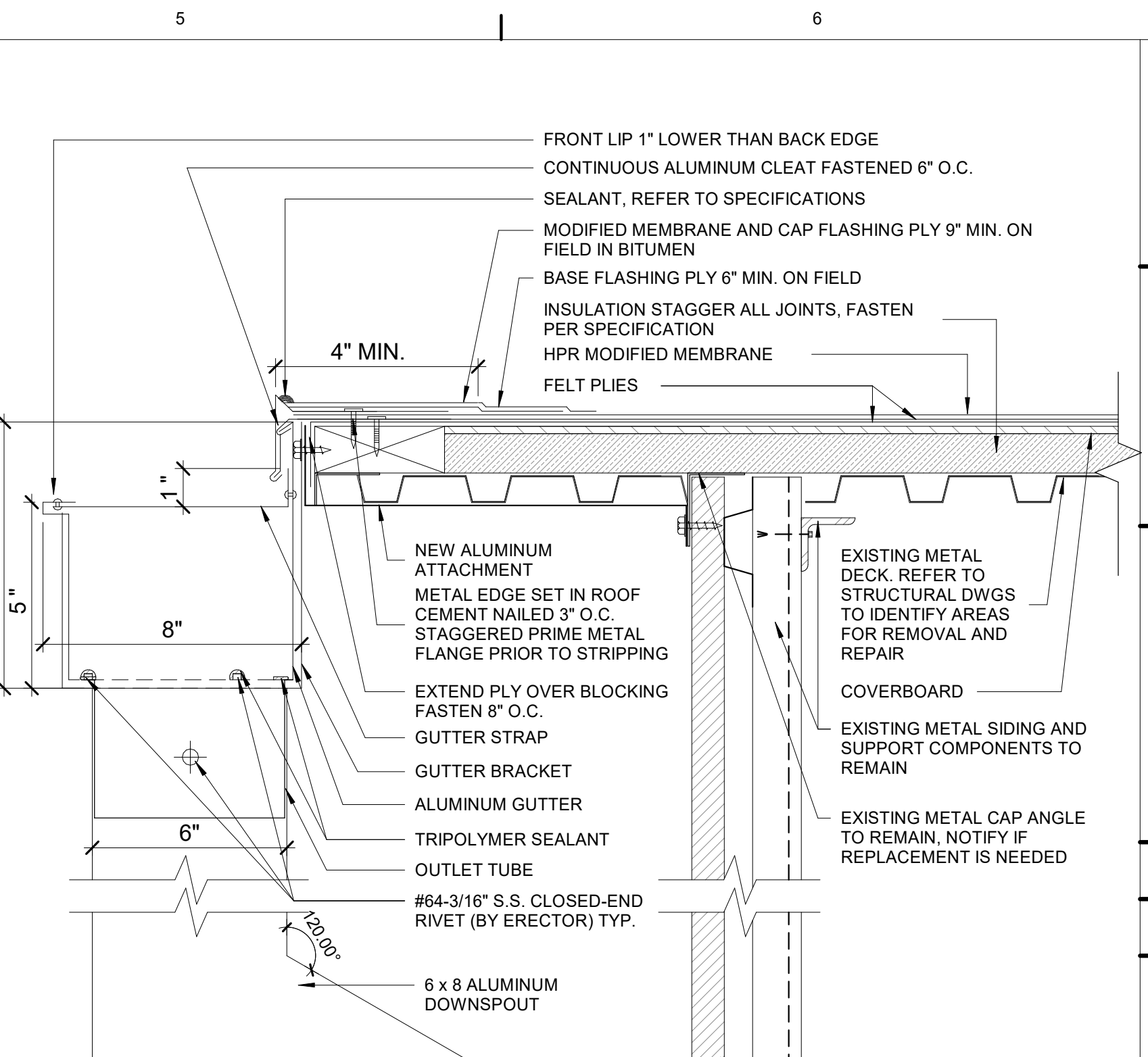
**7 PLUMBING STACK**  
SCALE: 3" = 1'-0"



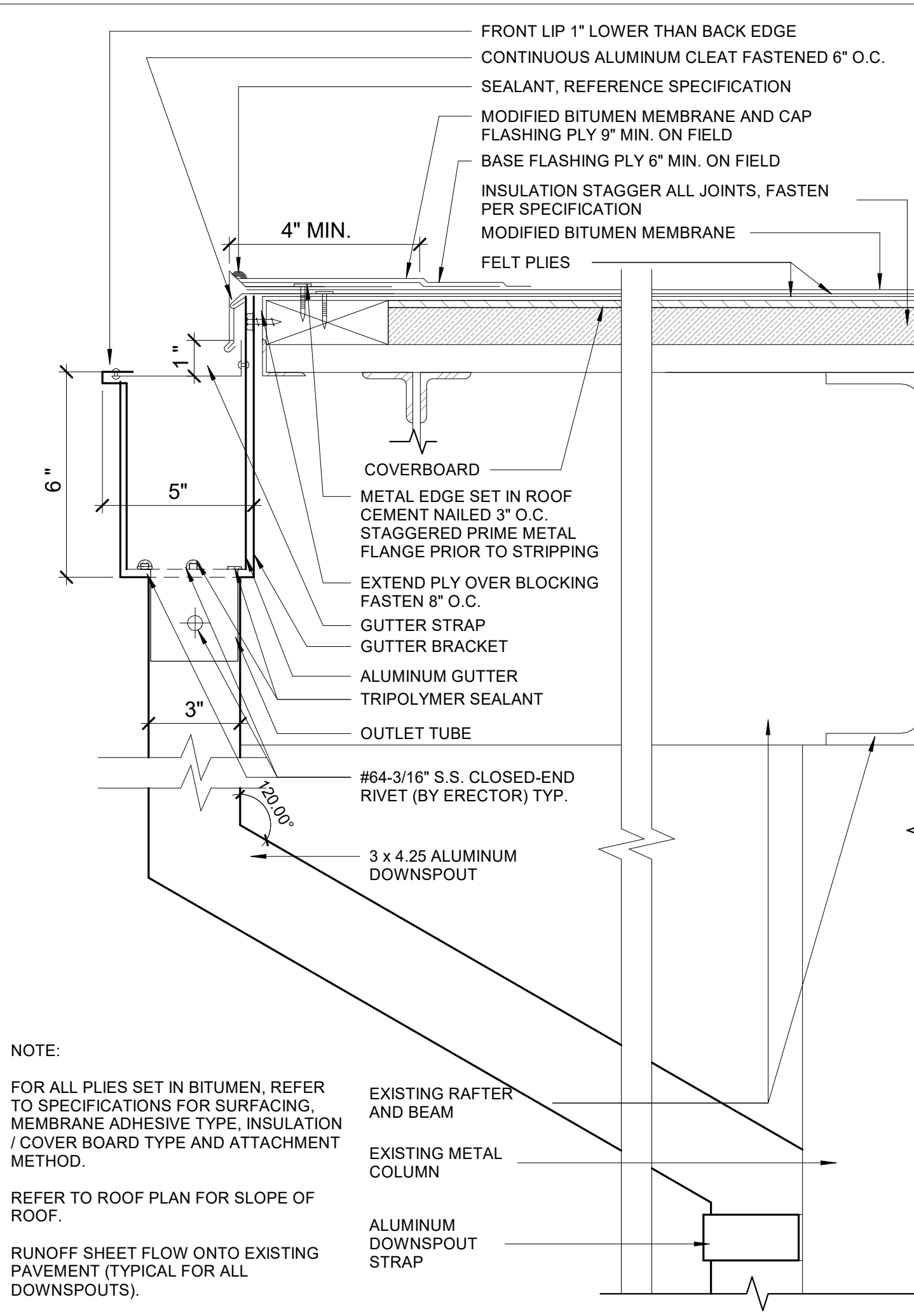
**6 VENTILATOR / FAN FLASHING DETAIL**  
SCALE: 3" = 1'-0"



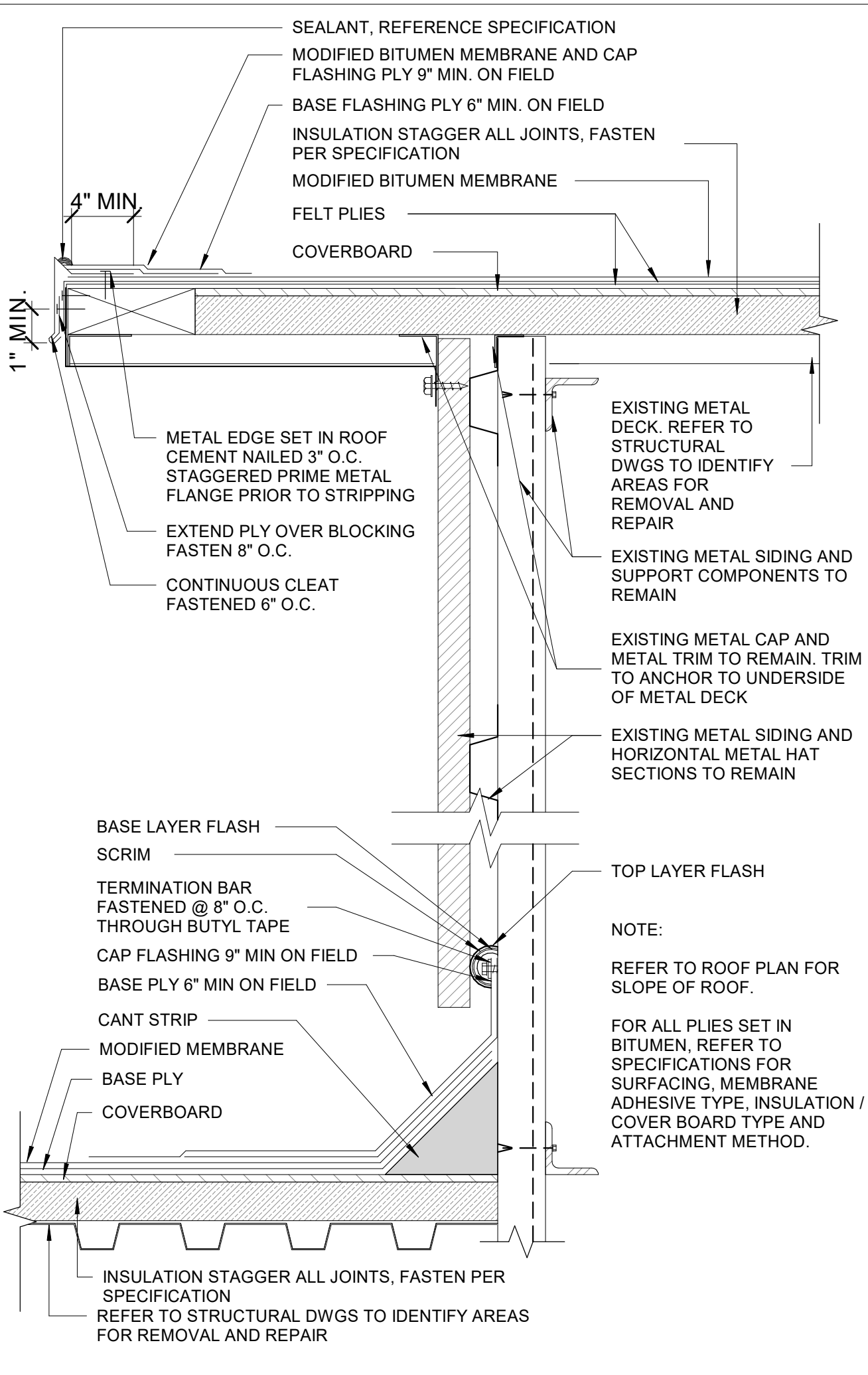
**5 LADDER DETAIL**  
SCALE: 1/2" = 1'-0"



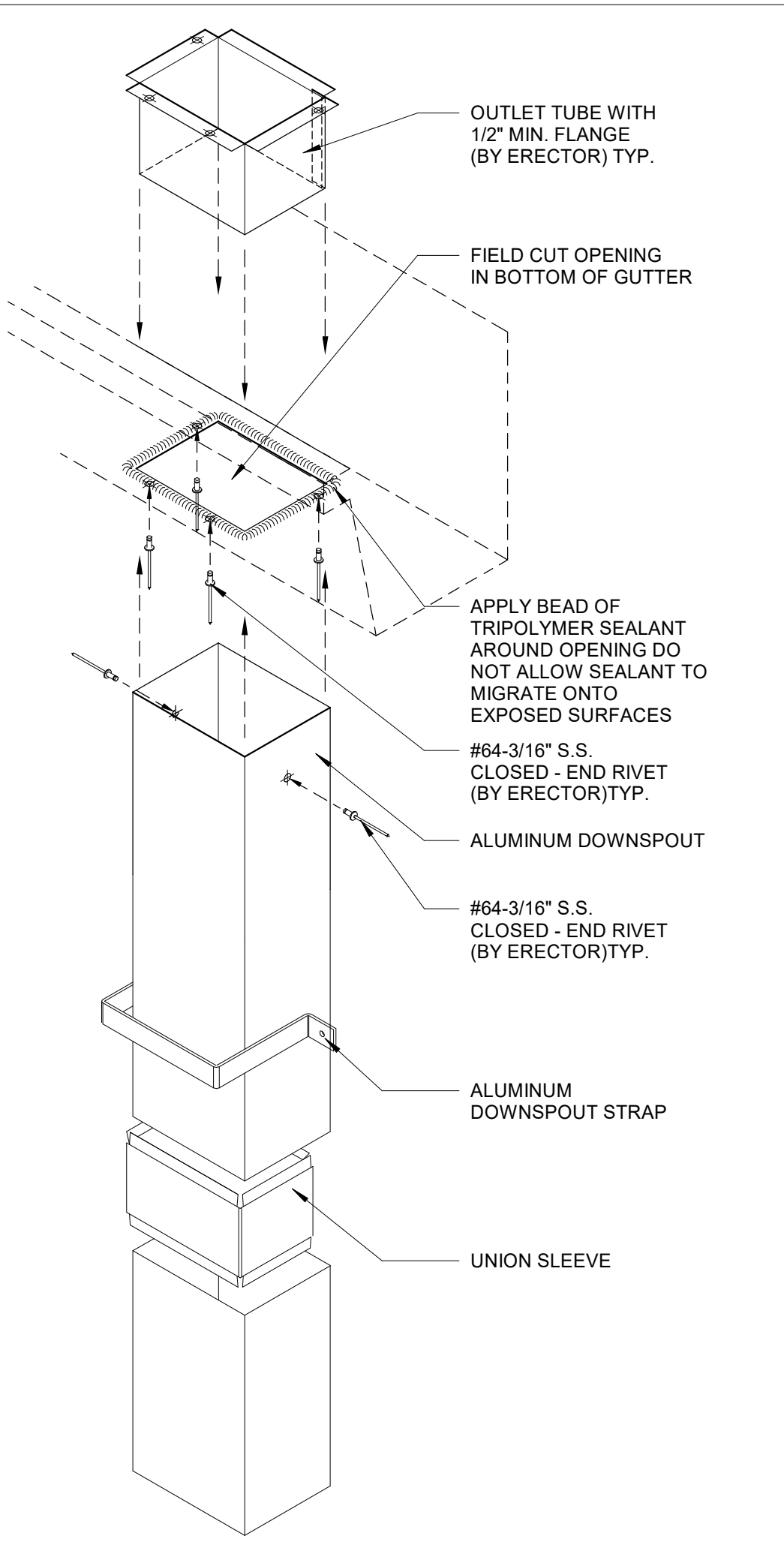
**4 LOW ROOF EDGE DETAIL**  
SCALE: 3" = 1'-0"



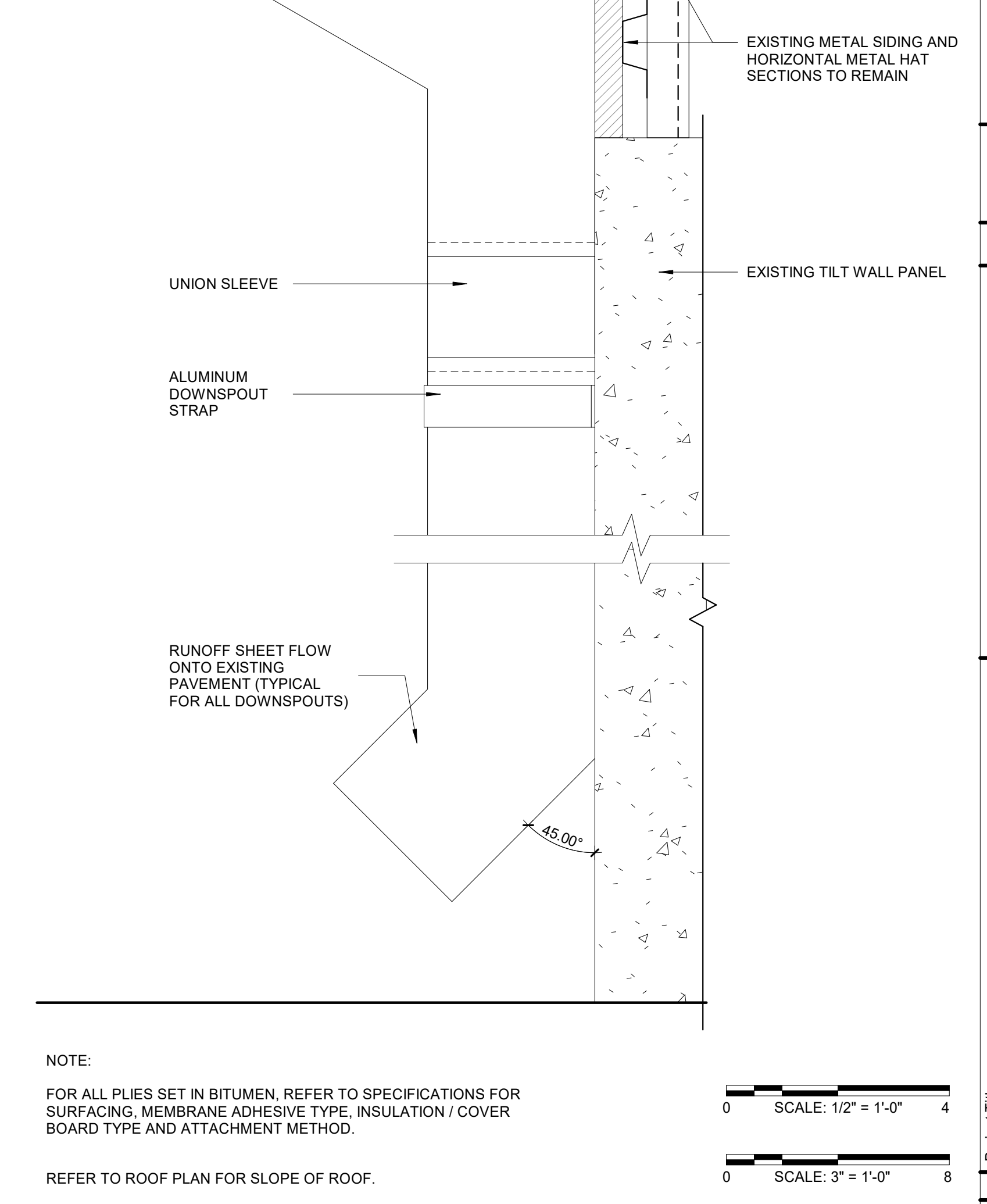
**3 BASE FLASHING GABLE END AND LOW ROOF**  
SCALE: 3" = 1'-0"



**2 DOWNSPOUT TO GUTTER DETAIL**  
SCALE: 3" = 1'-0"



**1 TYPICAL METAL ROOF EDGE**  
SCALE: 3" = 1'-0"



**1 TYPICAL METAL ROOF EDGE**  
SCALE: 3" = 1'-0"

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NO.	DATE	DR	BC	BC	CHK	APVD	KR

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PROPOSED MODIFIED BIT ROOF DETAILS

Date: SEPTEMBER 2021  
Proj. No.: EGXM2600  
Drawing No.: A-501

NO.	DSGN	DATE	DR	REVISION		BY	APVD
				CHK	BC		



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**PROPOSED MODIFIED BIT ROOF  
 DETAILS**

Date: SEPTEMBER 2021

Proj. No.: EGXM2600

Drawing No.:

**A-502**

