



## *TERMINAL ROOF REPLACEMENT PROJECT*

### *BID DOCUMENTS*

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Bishop International  
Airport Authority

Flint, Michigan

November 14, 2022

RS&H No.:  
210-0077-000



**BISHOP INTERNATIONAL AIRPORT AUTHORITY  
BISHOP INTERNATIONAL AIRPORT**

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**INVITATION TO BID**

PROJECT DESCRIPTION:     **Terminal Roof Replacement**  
BID DUE DATE:             **December 2, 2022**  
BID TIME:                 **11:00 a.m.**  
PLANS AVAILABLE:         **November 14, 2022, at ARC (see contact info below)**

Sealed bids will be received by the **Bishop International Airport Authority**, at the Administration Office until **11:00 a.m.** (local time), on the bid date, at which time and place all bids will be publicly opened and read aloud. **ANY BID RECEIVED AFTER THE SPECIFIED TIME WILL NOT BE CONSIDERED.**

The proposed Work includes the following: Removal of existing roof membrane and all accessories including insulations and installation of new single ply roof membrane system including all accessories (flashing, counterflashing, blocking, coping, etc.) Work included selective removal of a section(s) of standing seam metal roofing at gutter areas, roof board, and rigid insulation down to deck, EFIS wall covering, and related trims and flashings as required for new roof system. Installation of a new EPDM Single-Ply Membrane over a new metal gutter and roof insulation at select gutter areas and installation of new Single-Ply mechanically adhered PVC membrane all other areas. Removal and reinstallation of snow guard system as indicated on drawings.

A Pre-Bid Conference for this project will be held on **November 28, 2022, at 2:00 p.m.** (local time) at the **Bishop International Airport**, Pelavin Conference Room, located at G-3425 W. Bristol Road, Flint, Michigan 48507-3183. A site visit will be conducted as a part of this above Pre-Bid Conference.

Bidders may secure electronic copies of the Contract Documents by contacting the following (no partial sets will be issued):

ARC Document Solutions  
8226 Embury Road  
Grand Blanc, Michigan 48439  
(810) 695-9500

Plans may be viewed on the internet by contacting ARC.

Any bidder, if requested, shall be required to furnish evidence satisfactory to the Owner that he/she and his/her proposed subcontractors have sufficient experience in the types of work, necessary organization, capital, plant, and equipment called for to assure completion of the Contract in a satisfactory manner.

Each Bidder is individually responsible for the careful examination of the site of the proposed Work, the Proposal, Plans, General Provisions, Technical Specifications, Contract Forms, and all requirements of the project. The failure or omission by any Bidder to do so shall in no way relieve any Bidder from any obligation with respect to its bid. The Authority reserves the following rights: to accept or reject any or all bids; and to award the Contract to the most responsive and responsible Bidder whose bid is determined by the Authority to be in its best interest. Any and all proposals as submitted herein are subject to further negotiation at the option of Authority. No contract or agreement of any kind arising out of this proposal and/or negotiations shall be binding or valid against the Authority, its department, officers, employees, or agents unless such contract or agreement is in writing, has been authorized by the Bishop International Airport Authority Board of Directors, and signed by the Airport Director or his designee.

**BISHOP INTERNATIONAL AIRPORT  
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FLINT, MICHIGAN**

**SECTION 00100 - INSTRUCTIONS  
TO BIDDERS**

1. GENERAL:

- a. This project is to be financed by the Bishop International Airport Authority (BIAA). Award of contract is subject to the approval of BIAA
- b. Compliance with Law
  - 1) The Bidder covenants and agrees that he and his agents and employees will comply with all municipal, state, and federal laws, applicable national and local codes, **BIAA** rules and regulations applicable to the work to be conducted under this Agreement and that he shall obtain all necessary permits, pay all required fees and taxes, and otherwise perform these services in a legal manner. **BIAA** rules and regulations are available on request. The Bidder is assumed to be familiar with all federal, state and local laws, ordinances, **BIAA** rules and regulations that in any manner affect the work. Ignorance on the part of the Bidder will in no way relieve him from responsibility.
  - 2) Bidder certifies that all material, equipment, etc., contained in this proposal meets all OSHA requirements.
- c. Insurance Requirements:
  - 1) Insurance requirements shall be as specified in the General Conditions and Supplementary Conditions, Article 11.

2. SECURING DOCUMENTS

Copies of the Contract Documents may be obtained for bidding purposes as set forth in the INVITATION TO BID.

3. BID FORM

In order to receive consideration, all bids shall be made in strict accordance with the following:

- a. All bids shall be for complete construction of the project, as defined herein as the work.
- b. Bids shall be made upon the forms provided therefor, properly executed and with all items filled out. Do not change the wording of the Bid Form, and do not add words to the wording of the Bid Form. Unauthorized conditions, limitations, or provisions attached to the proposal shall be cause for rejection of the proposal. All blanks on the Bid Form for which an amount is requested

shall be legibly filled in by typing or manually in ink. Alterations by erasure or interlineation must be explained or noted in the bid over the signature of the bidder.

- c. No telegraphic bid or telegraphic modification of bid will be considered. No bids received after the time fixed for receiving them will be considered. Late bids will be returned to the sender unopened.
- d. Each bid shall be addressed to the Owner and shall be delivered to the Owner at the address given in the Invitation to Bid on or before the day and hour set for receiving bids. Each bid shall be enclosed in a sealed envelope bearing the title of the project, the name of the Bidder and address, Bidder's license number, classification of license, limits of classification, States in which licensed and expiration date, and the date and hour of the bid opening. It is the sole responsibility of the bidder to see that his bid is received on time.
- e. The Contractor shall include, and will be deemed to have included, in its bid and contract price all applicable Michigan Sales and Use taxes that have been enacted into law as of the date the bid is submitted.
- f. The Bid shall be a lump sum.

#### 4. BID BONDS

A bid bond in the amount of 5 percent of the proposed Contract Amount must accompany each proposal. All bid bonds shall be in the form of a cashier's check, certified check or a bond on the form referenced in the Project Manual and issued by a Surety licensed to conduct business in the State of Michigan and made payable to the Owner. The successful bidder's security will be retained until he has signed the Contract and furnished the required Labor and Materials Payment and Performance Bond. The Owner reserves the right to retain the security of the next two lowest responsive bidders until the lowest responsive and responsible bidder enters into contract or until 60 days after bid opening, whichever is shorter. All other bid security will be returned as soon as practicable. If any bidder refuses to enter into a Contract, the Owner will retain his bid bond as liquidated damages but not as a penalty.

#### 5. OTHER BONDS

Prior to signing the Contract, the Owner will require the selected Contractor to secure and post a Labor and Materials Payment Bond and a Performance Bond, each in the amount of 100 percent of the Contract Sum, and each on forms referenced in the Project Manual. All such bonds shall be issued by Surety acceptable to the Owner licensed to conduct business in the State of Michigan and having a Best's ratings of not less than "A" and a size classification of not less than X11. Include the costs of all such bonds in the proposed Contract Sum.

## 6. EXAMINATION OF DRAWINGS, PROJECT MANUAL, AND SITE OF WORK

Before submitting a bid, each bidder shall carefully examine the Drawings, read the Project Manual and all other proposed Contract Documents, and visit the site of the work. Each bidder shall fully inform himself prior to bidding as to all existing conditions and limitations under which the work is to be performed, and he shall include in his bid a sum to cover all costs of all items necessary to perform the work as set forth in the proposed Contract Documents. No allowance will be made to any bidder because of lack of such examination or knowledge. The submission of a bid will be construed as conclusive evidence that the bidder has made such examination.

## 7. PROOF OF COMPETENCY OF BIDDER

Any bidder, if requested, shall be required to furnish evidence satisfactory to the Owner that he and his proposed subcontractors have sufficient experience in the types of work, necessary organization, capital, plant and equipment called for to assure completion of the Contract in a satisfactory manner.

## 8. EQUAL OPPORTUNITY FOR EMPLOYMENT (MICHIGAN)

- a. The Contractor will comply with all applicable provisions of the Federal Civil Rights Act and the Michigan Fair Employment Practices Act, and the violation of either shall be cause for cancellation of this Contract.
- b. The Contractor and his Subcontractors, in accordance with the Michigan Fair Employment Practices Act, to the extent such act is applicable, shall not discriminate against any employee or applicant for employment, to be employed in the performance of such Contract, with respect to the hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment because of race, color, religion, national origin or ancestry (or age or sex, except where based on a bona fide occupational qualification.)

## 9. MBE, WME AND LOCAL PARTICIPATION

Bidder is encouraged to utilize minority- and women-owned business enterprises and other disadvantaged business enterprises (DBE), and suppliers and subcontractors whose businesses are located within Genesee County, Michigan.

## 10. MINIMUM WAGE RATES

Davis Bacon requirements are a part of this Contract.

## 11. WITHDRAWAL OF BIDS

Any bidder may withdraw his bid, either personally or by written request, at any time prior to scheduled time for receiving bids. No bidder may withdraw his bid for a period of 60 days



after the date set for receiving thereof, and all bids shall be subject to acceptance by the Owner during this period.

## 12. AWARD OR REJECTION OF BIDS

The Contract, if awarded, will be awarded to the responsive bidder who has proposed the lowest Contract Sum. The Owner expressly reserves the right to reject any or all bids and to waive informality and irregularity in the bids or bidding process or to make an award in its and the public's best interest.

## 13. SUBCONTRACTORS

As a condition of final award, the Contractor must submit to the Owner a list of all Subcontractors and their contract amounts for review.

## 14. EXECUTION OF AGREEMENT

The form of Agreement which the successful bidder, as Contractor, will be required to execute is included in the Project Manual.

- a. The bidder to whom the Contract is awarded by the Owner shall, within 10 days after notice to award and receipt of Agreement forms from the Owner, sign and deliver to the Owner all required copies for the Owner to execute. Further, no contract or agreement of any kind arising out of this proposal and/or negotiations shall be binding or valid against the Authority, its department, officers, employees, or agents unless such contract or agreement is in writing and has been authorized by the Bishop International Airport Authority Board of Directors and signed by the Airport Director, or his designee.
- b. At or prior to delivery of the signed Agreement, the Contractor shall deliver to the Owner the Labor and Materials Payment Bond, the Performance Bond, and the policies of insurance or insurance certificates as required by the Contract Documents. All bonds and policies of insurance must be approved by the Owner before the successful bidder may proceed with the work.
- c. Failure or refusal to furnish bonds or insurance policies or certificates in a form satisfactory to the Owner shall subject the bidder to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.

## 15. INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO BIDDING

If any person contemplating submitting a bid for construction of the work is in doubt as to the true meaning of any part of the proposed Contract Documents, or finds discrepancies in or omissions from any part of the proposed Contract Documents, he may submit to the Architect a written request for interpretation thereof not later than seven days before bids will be received:

- a. The person submitting the request shall be responsible for its prompt delivery.

- b. Interpretation or correction of proposed Contract Documents will be made only by Addendum, and will be electronically delivered, mailed, or delivered to each bidder of record.
- c. The Owner will not be responsible for any other explanations or interpretations of the proposed Contract Documents.
- d. Submit inquiries by email to David Joye, PE, RS&H at david.joye@rsandh.com.

#### 16. SUBSTITUTIONS

To obtain approval to use unspecified products, bidders shall submit written requests to the Architect-Engineer at least seven calendar days before the date the bid is due. Requests received after this date or time shall not be considered. Request shall clearly describe the product for which approval is asked, including all data necessary to demonstrate acceptability. If the substitution is acceptable, the Architect shall approve the product in an Addendum, which will be electronically delivered, mailed, or delivered to all Bidders.

Any use as a base for bidding of a material, equipment, or system other than that specified, unless such material, equipment, or system has been approved by the Architect before submission of General Contractor's Bid to Owner, will be made at Bidder's risk. No substitution shall be made without authority in writing from the Architect.

#### 17. PRE-BID CONFERENCE

A Pre-Bid Conference will be held on November 28, 2022, at 2:00 PM at the office of the Airport Authority located on the second floor of Bishop International Airport, G-3425 West Bristol Road, Flint Michigan 48507-3183. All General Contractors planning to submit bids are encouraged to attend. A site visit will be conducted as part of the Pre-Bid Conference.

#### 18. CONSTRUCTION TIME AND LIQUIDATED DAMAGES

The Agreement will include a stipulation that all work be substantially completed by October 31<sup>st</sup>, 2023, following receipt of the initial Notice to Proceed. The Agreement will also include a stipulation that liquidated damages will be established for the agreed amount of:

- 1. Liquidated Damages: \$500 per calendar day for each calendar day delayed beyond the overall construction time of 365 days. It is understood that this sum stated as liquidated damages is reasonable in amount, considering the damages that the Owner will sustain in the event of any such delay, and said amount is herein agreed upon and fixed as liquidated damages, because of the difficulty of ascertaining the exact amount of damages that may be sustained by such delay.

END OF SECTION 00100

**BISHOP INTERNATIONAL AIRPORT  
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FLINT, MICHIGAN**

**SECTION 00300 - BID FORM**

TO:

BISHOP INTERNATIONAL AIRPORT AUTHORITY

1. Pursuant to and in compliance with the Invitation to Bid and the proposed Contract Documents relating to construction of:

BISHOP INTERNATIONAL AIRPORT  
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Including Addenda \_\_\_\_\_ through \_\_\_\_\_.

The undersigned, having become thoroughly familiar with the terms and conditions of the proposed Contract Documents and with local conditions affecting the performance and costs of the work at the place where the work is to be completed, and having fully inspected the site in all particulars, hereby proposes and agrees to fully perform the work within the time stated and in strict accordance with the proposed Contract Documents, including furnishing any and all labor and materials, and to do all of the work required to construct and complete said work in accordance with the Contract Documents, for the following sum of money:

A. BASE BID: **Bid selection is based on the Base Bid Only.**

1. Lump Sum Cost for **Base Bid**: (Area of work included in base bid as defined on Sheet G003 of the drawings set)  
(in words) \_\_\_\_\_

\_\_\_\_\_ Dollars

(in numbers) \$ \_\_\_\_\_.

B. BID ADDITIVE ALTERNATES: **Bid selection is based on the Base Bid Only.**

1. Lump Sum Cost for **Bid Additive Alternate 1**: (Area of work included in Bid Additive Alternate 1 as defined on Sheet G003 of the drawings set)  
(in words) \_\_\_\_\_

\_\_\_\_\_ Dollars

(in numbers) \$ \_\_\_\_\_.

2. Lump Sum Cost for **Bid Additive Alternate 2:** (Area of work included in Bid Additive Alternate 2 as defined on Sheet G003 of the drawings set)  
(in words) \_\_\_\_\_

\_\_\_\_\_ Dollars

(in numbers) \$ \_\_\_\_\_.

3. Lump Sum Cost for **Bid Additive Alternate 3:** (Area of work included in Bid Additive Alternate 3 as defined on Sheet G003 of the drawings set)  
(in words) \_\_\_\_\_

\_\_\_\_\_ Dollars

(in numbers) \$ \_\_\_\_\_.

2. Prime Bidder must be prequalified with the roofing material manufacturer (Firestone Building Products or Carlisle SynTec Systems). The bidder shall provide documentation from roofing material manufacturer that they can purchase and supply a 20-year Manufacturer's Warranty for the system specified. The awarded roofing contractor shall install Firestone Building Products or Carlisle SynTec Systems labeled roofing materials only. No other manufacturers will be considered at this time. If the Prime Bidder is not prequalified with Firestone Building Products or Carlisle SynTec Systems, then the Prime Bidder must use a prequalified subcontractor which is prequalified. This subcontractor(s) must be designated prior to award of the contract.

\_\_\_\_\_  
Roofing Material Manufacturer

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

3. Bidder understands and agrees that Owner reserves the right to reject this bid, but that this bid shall remain open and not be withdrawn for a period of 90 days from the date and time prescribed for its receiving.
4. If written notice of the acceptance of this bid is mailed or delivered to the undersigned within 60 days after the date set for the receiving of this bid, or at any other time thereafter before it is withdrawn, the undersigned will execute and deliver the Contract Documents to the Owner in accordance with this bid as accepted, and will also furnish and deliver to the Owner the Performance Bond, Labor and Material Payment Bond, and proof of insurance coverage, all within 10 days after personal delivery or after deposit in the mails of the notification of acceptance of this bid.
5. Notice of acceptance, or request for additional information, may be addressed to the undersigned at the address set forth below.
6. The names of all persons interested in the foregoing bid as principals are:

(IMPORTANT NOTICE: If bidder or other interested person is a corporation, give legal name of corporation, state where incorporated, and names of president, secretary, all directors and principal shareholders; if a partnership, give name of firm and names of all

individual co-partners composing the firm; if bidder or other interested person is an individual, give first and last names in full)

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licensed in accordance with an act for the registration of contractors, and with license number \_\_\_\_\_ in the State of Michigan.

SIGN HERE: \_\_\_\_\_  
Signature of Bidder

NOTE: If bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Business address:

Telephone number: \_\_\_\_\_ Date of proposal: \_\_\_\_\_

## CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

### Certifications

- 1) The applicant represents that it is ( ☐ ) is not ( ☐ ) a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
  
- 2) The applicant represents that it is ( ☐ ) is not ( ☐ ) is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

### Note

If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore must provide information to the owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

### Term Definitions

**Felony conviction:** Felony conviction means a conviction within the preceding twenty-four (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. § 3559.

**Tax Delinquency:** A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

**END OF SECTION 00300**

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FLINT, MICHIGAN**

**SECTION 00510 - PROJECT FORMS**

**SUMMARY**

The following forms or equivalent shall be used on this Project.

AIA A101	Owner-Contractor Agreement Form, Stipulated Sum (2017 Edition).
AIA A201	General Conditions of the Contract for Construction (2017 Edition).
AIA A305	Contractor's Qualification Statement (2020 Edition).
AIA A310	Bid Bond (2010).
AIA A312	Performance Bond and Labor and Materials Payment Bond (2010 Edition).
AIA G701	Change Order (2017 Edition).
AIA G702	Application and Certificate for Payment (1992 Edition).
AIA G703	Continuation Sheet for G702 (1992 Edition).
AIA G704	Certificate of Substantial Completion (2017 Edition).
AIA G706	Contractor's Affidavit of Payment of Debts and Claims (1994 Edition).
AIA G706A	Contractor's Affidavit of Release of Liens (1994 Edition).
AIA G707	Consent of Surety to Final Payment (1994 Edition).
AIA G707A	Consent of Surety to Reduction in or Partial Releases of Retainage (1994 Edition).
AIA G709	Proposal Request (2018 Edition).
AIA G710	Architect's Supplemental Instructions (2017 Edition).
AIA G711	Architect's Field Report (2018).
AIA G714	Construction Change Directive (2017 Edition).
AIA G715	Instruction Sheet & Attachment for AIA Certificate of Insurance (2017 Edition).

END OF SECTION 00510

**BISHOP INTERNATIONAL AIRPORT  
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FLINT, MICHIGAN**

**SECTION 00600 – OWNER & CONTRACTOR  
FORM OF AGREEMENT**

**FORM OF AGREEMENT**

The form of agreement between the Owner and the Contractor shall be the "STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR where the basis of payment is a STIPULATED SUM," (AIA Document A101) Articles 1 through 10, inclusive, AIA Document No. A101, 2017 Edition as published by THE AMERICAN INSTITUTE OF ARCHITECTS, which is attached at the end of this Section.

**END OF SECTION 00600**



# AIA® Document A101® – 2017

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

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

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

Bishop International Airport  
G-3425 West Bristol Road  
Flint, MI 48507-3183

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

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

Bishop International Airport Reroof Project  
Bishop International Airport  
G-3425 West Bristol Road  
Flint, MI 48507-3183

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

RS&H Michigan, Inc.  
G-3101 West Bristol Road, Suite 300  
Flint, MI 48507-3183

The Owner and Contractor agree as follows.

### **ADDITIONS AND DELETIONS:**

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

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

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

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## EXHIBIT A INSURANCE AND BONDS

### ARTICLE 1 THE CONTRACT DOCUMENTS

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

### ARTICLE 2 THE WORK OF THIS CONTRACT

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

### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

*(Check one of the following boxes.)*

- ☐ The date of this Agreement.
- ☐ A date set forth in a notice to proceed issued by the Owner.
- ☐ Established as follows:  
*(Insert a date or a means to determine the date of commencement of the Work.)*

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

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

#### § 3.3 Substantial Completion

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

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

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

[ ] By the following date:

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

**Portion of Work**

**Substantial Completion Date**

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

**ARTICLE 4 CONTRACT SUM**

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

**§ 4.2 Alternates**

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

**Item**

**Price**

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

**Item**

**Price**

**Conditions for Acceptance**

§ 4.3 Allowances, if any, included in the Contract Sum:  
(Identify each allowance.)

**Item**

**Price**

**§ 4.4 Unit prices, if any:**

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

**Item**

**Units and Limitations**

**Price per Unit (\$0.00)**

**§ 4.5 Liquidated damages, if any:**

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

**§ 4.6 Other:**

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

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

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

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

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

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

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

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

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

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

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

### § 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

*(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)*

§ 5.1.7.1.1 The following items are not subject to retainage:

*(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)*

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

*(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)*

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

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

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

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

## § 5.2 Final Payment

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

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

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

## § 5.3 Interest

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

*(Insert rate of interest agreed upon, if any.)*

%

## ARTICLE 6 DISPUTE RESOLUTION

### § 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

## § 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box.)*

- ☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- ☐ Litigation in a court of competent jurisdiction
- ☐ Other *(Specify)*

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

## ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

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

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:

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

§ 8.3 The Contractor’s representative:

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

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

#### § 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

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

§ 8.7 Other provisions:

### ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

*(Insert the date of the E203-2013 incorporated into this Agreement.)*

- .5 Drawings

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

- .6 Specifications

Section	Title	Date	Pages
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- .7 Addenda, if any:

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

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

- .8 Other Exhibits:

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

[ ] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
(Insert the date of the E204-2017 incorporated into this Agreement.)

[ ] The Sustainability Plan:

Title	Date	Pages
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[ ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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- .9 Other documents, if any, listed below:  
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

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

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

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

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

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



# **Additions and Deletions Report for**

## **AIA® Document A101® – 2017**

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

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 12:28:37 ET on 01/14/2022.

### **PAGE 1**

Bishop International Airport  
G-3425 West Bristol Road  
Flint, MI 48507-3183

...

Bishop International Airport Reroof Project  
Bishop International Airport  
G-3425 West Bristol Road  
Flint, MI 48507-3183

...

RS&H Michigan, Inc.  
G-3101 West Bristol Road, Suite 300  
Flint, MI 48507-3183

## ***Certification of Document's Authenticity***

***AIA® Document D401™ – 2003***

I, \_\_\_\_\_, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 12:28:37 ET on 01/14/2022 under Order No. 5268128048 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A101™ – 2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

\_\_\_\_\_  
*(Signed)*

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

\_\_\_\_\_  
*(Dated)*

## General Contract Provisions

### Section 10 Definition of Terms

When the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be defined as follows:

Paragraph Number	Term	Definition
10-01	AASHTO	The American Association of State Highway and Transportation Officials.
10-02	Access Road	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
10-03	Advertisement	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
10-04	Airport	Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; airport buildings and facilities located in any of these areas, and a heliport.
10-05	Airport Improvement Program (AIP)	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
10-06	Air Operations Area (AOA)	The term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
10-07	Apron	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	ASTM International (ASTM)	Formerly known as the American Society for Testing and Materials (ASTM).

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
<b>10-09</b>	<b>Award</b>	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
<b>10-10</b>	<b>Bidder</b>	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
<b>10-11</b>	<b>Building Area</b>	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
<b>10-12</b>	<b>Calendar Day</b>	Every day shown on the calendar.
<b>10-13</b>	<b>Certificate of Analysis (COA)</b>	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
<b>10-14</b>	<b>Certificate of Compliance (COC)</b>	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
<b>10-15</b>	<b>Change Order</b>	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
<b>10-16</b>	<b>Contract</b>	<p>A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment.</p> <p>The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.</p>
<b>10-17</b>	<b>Contract Item (Pay Item)</b>	A specific unit of work for which a price is provided in the contract.
<b>10-18</b>	<b>Contract Time</b>	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
		calendar or working days, the contract shall be completed by that date.
<b>10-19</b>	<b>Contractor</b>	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
<b>10-20</b>	<b>Contractors Quality Control (QC) Facilities</b>	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
<b>10-21</b>	<b>Contractor Quality Control Program (CQCP)</b>	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
<b>10-22</b>	<b>Control Strip</b>	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.
<b>10-23</b>	<b>Construction Safety and Phasing Plan (CSPP)</b>	The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.
<b>10-24</b>	<b>Drainage System</b>	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
<b>10-25</b>	<b>Engineer</b>	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
<b>10-26</b>	<b>Equipment</b>	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
<b>10-27</b>	<b>Extra Work</b>	An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Owner's Engineer or Resident Project Representative (RPR) to be necessary to

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
		complete the work within the intended scope of the contract as previously modified.
<b>10-28</b>	<b>FAA</b>	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
<b>10-29</b>	<b>Federal Specifications</b>	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
<b>10-30</b>	<b>Force Account</b>	<p><b>a.</b> Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis.</p> <p><b>b.</b> Owner Force Account - Work performed for the project by the Owner's employees.</p>
<b>10-31</b>	<b>Intention of Terms</b>	<p>Whenever, in these specifications or on the plans, the words “directed,” “required,” “permitted,” “ordered,” “designated,” “prescribed,” or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words “approved,” “acceptable,” “satisfactory,” or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner.</p> <p>Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.</p>
<b>10-32</b>	<b>Lighting</b>	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
<b>10-33</b>	<b>Major and Minor Contract Items</b>	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
<b>10-34</b>	<b>Materials</b>	Any substance specified for use in the construction of the contract work.
<b>10-35</b>	<b>Modification of Standards (MOS)</b>	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
<b>10-36</b>	<b>Notice to Proceed (NTP)</b>	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.
<b>10-37</b>	<b>Owner</b>	The term “Owner” shall mean the party of the first part or the contracting agency signatory to the contract. Where the term “Owner” is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project is Bishop International Airport Authority.
10-38	Passenger Facility Charge (PFC)	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
<b>10-39</b>	<b>Pavement Structure</b>	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
<b>10-40</b>	<b>Payment bond</b>	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.
<b>10-41</b>	<b>Performance bond</b>	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
<b>10-42</b>	<b>Plans</b>	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
<b>10-43</b>	<b>Project</b>	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
<b>10-44</b>	<b>Proposal</b>	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
		and furnish the necessary materials in accordance with the provisions of the plans and specifications.
<b>10-45</b>	<b>Proposal guaranty</b>	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
<b>10-46</b>	<b>Quality Assurance (QA)</b>	Owner's responsibility to assure that construction work completed complies with specifications for payment.
<b>10-47</b>	<b>Quality Control (QC)</b>	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
<b>10-48</b>	<b>Quality Assurance (QA) Inspector</b>	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
<b>10-49</b>	<b>Quality Assurance (QA) Laboratory</b>	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
<b>10-50</b>	<b>Resident Project Representative (RPR)</b>	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
<b>10-51</b>	<b>Runway</b>	The area on the airport prepared for the landing and takeoff of aircraft.
<b>10-52</b>	<b>Runway Safety Area (RSA)</b>	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
<b>10-53</b>	<b>Safety Plan Compliance Document (SPCD)</b>	Details how the Contractor will comply with the CSPP.
<b>10-54</b>	<b>Specifications</b>	A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the



<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
		contract specifications by reference shall have the same force and effect as if included in the contract physically.
<b>10-55</b>	<b>Sponsor</b>	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
<b>10-56</b>	<b>Structures</b>	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.
<b>10-57</b>	<b>Subgrade</b>	The soil that forms the pavement foundation.
<b>10-58</b>	<b>Superintendent</b>	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
<b>10-59</b>	<b>Supplemental Agreement</b>	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%; (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
<b>10-60</b>	<b>Surety</b>	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
<b>10-61</b>	<b>Taxilane</b>	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
<b>10-62</b>	<b>Taxiway</b>	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
<b>10-63</b>	<b>Taxiway/Taxilane Safety Area (TSA)</b>	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
		the construction safety and phasing plan (CSPP) for limits of the TSA.
<b>10-64</b>	<b>Work</b>	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
<b>10-65</b>	<b>Working day</b>	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.
<b>10-66</b>	<b>Owner Defined terms</b>	None

**END OF SECTION 10**

## Section 20 Proposal Requirements and Conditions

**20-01 Advertisement (Notice to Bidders).** Information included in Section 00004 of this document.

**20-02 Qualification of bidders.** Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Owner at the time of bid opening.

Evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, and a list of equipment and a list of key personnel that would be available for the work.

Each bidder shall furnish the Owner satisfactory evidence of their financial responsibility. Evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether their financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the Owner.

Unless otherwise specified, a bidder may submit evidence that they are prequalified with the State Highway Division and are on the current "bidder's list" of the state in which the proposed work is located. Evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above.

**20-03 Contents of proposal forms.** The Owner's proposal forms state the location and description of the proposed construction; the place, date, and time of opening of the proposals; and the estimated quantities of the various items of work to be performed and materials to be furnished for which unit bid prices are asked. The proposal form states the time in which the work must be completed, and the amount of the proposal guaranty that must accompany the proposal. The Owner will accept only those Proposals properly executed on physical forms or electronic forms provided by the Owner. Bidder actions that may cause the Owner to deem a proposal irregular are given in paragraph 20-09 *Irregular proposals*.

A pre-bid conference is required on this project to discuss as a minimum, the following items: material requirements; submittals; Quality Control/Quality Assurance requirements; the construction safety and phasing plan including airport access and staging areas; and unique airfield paving construction requirements. The time, date, and place of the meeting is listed in Section 00004 of this document.

**20-04 Issuance of proposal forms.** The Owner reserves the right to refuse to issue a proposal form to a prospective bidder if the bidder is in default for any of the following reasons:

- a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.
- b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force with the Owner at the time the Owner issues the proposal to a prospective bidder.
- c. Documented record of Contractor default under previous contracts with the Owner.
- d. Documented record of unsatisfactory work on previous contracts with the Owner.

**20-05 Interpretation of estimated proposal quantities.** An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as provided in the Section 40, paragraph 40-02, Alteration of Work and Quantities, without in any way invalidating the unit bid prices.

**20-06 Examination of plans, specifications, and site.** The bidder is expected to carefully examine the site of the proposed work, the proposal, plans, specifications, and contract forms. Bidders shall satisfy themselves to the character, quality, and quantities of work to be performed, materials to be furnished, and to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied to the conditions to be encountered in performing the work and the requirements of the proposed contract, plans, and specifications.

**20-07 Preparation of proposal.** The bidder shall submit their proposal on the forms furnished by the Owner. All blank spaces in the proposal forms, unless explicitly stated otherwise, must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) both in words and numerals which they propose for each pay item furnished in the proposal. In case of conflict between words and numerals, the words, unless obviously incorrect, shall govern.

The bidder shall correctly sign the proposal in ink. If the proposal is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state where the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of their authority to do so and that the signature is binding upon the firm or corporation.

**20-08 Responsive and responsible bidder.** A responsive bid conforms to all significant terms and conditions contained in the Owner's invitation for bid. It is the Owner's responsibility to decide if the exceptions taken by a bidder to the solicitation are material or not and the extent of deviation it is willing to accept.

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 2 CFR § 200.318(h). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

**20-09 Irregular proposals.** Proposals shall be considered irregular for the following reasons:

- a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.
- b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.
- c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.
- d. If the proposal contains unit prices that are obviously unbalanced.
- e. If the proposal is not accompanied by the proposal guaranty specified by the Owner.
- f. If the applicable Disadvantaged Business Enterprise information is incomplete.

The Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

**20-10 Bid guarantee.** Each separate proposal shall be accompanied by a bid bond, certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such bond, check, or collateral, shall be made payable to the Owner.

**20-11 Delivery of proposal.** Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless received at the place specified in the advertisement or as modified by Addendum before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened.

**20-12 Withdrawal or revision of proposals.** A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the Owner in writing, by fax, or by email before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

**20-13 Public opening of proposals.** Proposals shall be opened, and read, publicly at the time and place specified in the advertisement. Bidders, their authorized agents, and other interested persons are invited to attend. Proposals that have been withdrawn (by written or telegraphic request) or received after the time specified for opening bids shall be returned to the bidder unopened.

**20-14 Disqualification of bidders.** A bidder shall be considered disqualified for any of the following reasons:

a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.

b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.

c. If the bidder is considered to be in "default" for any reason specified in paragraph 20-04, *Issuance of Proposal Forms*, of this section.

**20-15 Discrepancies and Omissions.** A Bidder who discovers discrepancies or omissions with the project bid documents shall immediately notify the Owner's Engineer of the matter. A bidder that has doubt as to the true meaning of a project requirement may submit to the Owner's Engineer a written request for interpretation no later than 7 calendar days prior to bid opening.

Any interpretation of the project bid documents by the Owner's Engineer will be by written addendum issued by the Owner. The Owner will not consider any instructions, clarifications or interpretations of the bidding documents in any manner other than written addendum.

## **END OF SECTION 20**

## Section 30 Award and Execution of Contract

**30-01 Consideration of proposals.** After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit bid price written in words shall govern.

Until the award of a contract is made, the Owner reserves the right to reject a bidder's proposal for any of the following reasons:

a. If the proposal is irregular as specified in Section 20, paragraph 20-09, *Irregular Proposals*.

b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, *Disqualification of Bidders*.

In addition, until the award of a contract is made, the Owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Owner and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the Owner's best interests.

**30-02 Award of contract.** The award of a contract, if it is to be awarded, shall be made within 90 calendar days of the date specified for publicly opening proposals, unless otherwise specified herein.

If the Owner elects to proceed with an award of contract, the Owner will make award to the responsible bidder whose bid, conforming with all the material terms and conditions of the bid documents, is the lowest in price.

**30-03 Cancellation of award.** The Owner reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the Owner in accordance with paragraph 30-07 *Approval of Contract*.

**30-04 Return of proposal guaranty.** All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the Owner has made a comparison of bids as specified in the paragraph 30-01, *Consideration of Proposals*. Proposal guaranties of the two lowest bidders will be retained by the Owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. The successful bidder's proposal guaranty will be returned as soon as the Owner receives the contract bonds as specified in paragraph 30-05, *Requirements of Contract Bonds*.

**30-05 Requirements of contract bonds.** At the time of the execution of the contract, the successful bidder shall furnish the Owner a surety bond or bonds that have been fully executed by the bidder and the surety guaranteeing the performance of the work and the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work. The surety and the form of the bond or bonds shall be acceptable to the Owner. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

**30-06 Execution of contract.** The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the Owner, along with the fully executed surety bond or bonds specified in paragraph 30-05, *Requirements of Contract Bonds*, of this section, within 15 calendar days from the date mailed or otherwise delivered to the successful bidder.

**30-07 Approval of contract.** Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the Owner shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the Owner's approval to be bound by the successful bidder's proposal and the terms of the contract.

**30-08 Failure to execute contract.** Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the period specified in paragraph 30-06, *Execution of Contract*, of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidated damages to the Owner.

**END OF SECTION 30**

## Section 40 Scope of Work

**40-01 Intent of contract.** The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

**40-02 Alteration of work and quantities.** The Owner reserves the right to make such changes in quantities and work as may be necessary or desirable to complete, in a satisfactory manner, the original intended work. Unless otherwise specified in the Contract, the Owner's Engineer or RPR shall be and is hereby authorized to make, in writing, such in-scope alterations in the work and variation of quantities as may be necessary to complete the work, provided such action does not represent a significant change in the character of the work.

For purpose of this section, a significant change in character of work means: any change that is outside the current contract scope of work; any change (increase or decrease) in the total contract cost by more than 25%; or any change in the total cost of a major contract item by more than 25%.

Work alterations and quantity variances that do not meet the definition of significant change in character of work shall not invalidate the contract nor release the surety. Contractor agrees to accept payment for such work alterations and quantity variances in accordance with Section 90, paragraph 90-03, *Compensation for Altered Quantities*.

Should the value of altered work or quantity variance meet the criteria for significant change in character of work, such altered work and quantity variance shall be covered by a supplemental agreement. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds. If the Owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the Owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

**40-03 Omitted items.** The Owner, the Owner's Engineer or the RPR may provide written notice to the Contractor to omit from the work any contract item that does not meet the definition of major contract item. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with Section 90, paragraph 90-04, *Payment for Omitted Items*.

**40-04 Extra work.** Should acceptable completion of the contract require the Contractor to perform an item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, Owner may issue a Change Order to cover the necessary extra work. Change orders for extra work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the RPR's opinion, is necessary for completion of the extra work.

When determined by the RPR to be in the Owner's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, *Payment for Extra Work*. Extra work that is necessary for acceptable completion of the project, but is not within the general scope of the work



covered by the original contract shall be covered by a supplemental agreement as defined in Section 10, paragraph 10-59, *Supplemental Agreement*.

If extra work is essential to maintaining the project critical path, RPR may order the Contractor to commence the extra work under a Time and Material contract method. Once sufficient detail is available to establish the level of effort necessary for the extra work, the Owner shall initiate a change order or supplemental agreement to cover the extra work.

Any claim for payment of extra work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the Owner.

**40-05 Maintenance of traffic.** It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. The Contractor shall maintain traffic in the manner detailed in the Construction Safety and Phasing Plan (CSPP).

a. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to their own operations and the operations of all subcontractors as specified in Section 80, paragraph 80-04, *Limitation of Operations*. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in Section 70, paragraph 70-15, *Contractor's Responsibility for Utility Service and Facilities of Others*.

b. With respect to their own operations and the operations of all subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport in accordance with the construction safety and phasing plan (CSPP) and the safety plan compliance document (SPCD).

c. When the contract requires the maintenance of an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (<http://mutcd.fhwa.dot.gov/>), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways.

**40-06 Removal of existing structures.** All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Resident Project Representative (RPR) shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the RPR in accordance with the provisions of the contract.

Except as provided in Section 40, paragraph 40-07, *Rights in and Use of Materials Found in the Work*, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the work as otherwise provided for in the contract and shall remain the property of the Owner when so used in the work.

**40-07 Rights in and use of materials found in the work.** Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be embankment, the Contractor may at their own option either:

- a. Use such material in another contract item, providing such use is approved by the RPR and is in conformance with the contract specifications applicable to such use; or,
- b. Remove such material from the site, upon written approval of the RPR; or
- c. Use such material for the Contractor's own temporary construction on site; or,
- d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., the Contractor shall request the RPR's approval in advance of such use.

Should the RPR approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at their expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the contract work. The Contractor shall not be charged for use of such material used in the work or removed from the site.

Should the RPR approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of their own exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

**40-08 Final cleanup.** Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. The Contractor shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of the property Owner.

## **END OF SECTION 40**

## Section 50 Control of Work

**50-01 Authority of the Resident Project Representative (RPR).** The RPR has final authority regarding the interpretation of project specification requirements. The RPR shall determine acceptability of the quality of materials furnished, method of performance of work performed, and the manner and rate of performance of the work. The RPR does not have the authority to accept work that does not conform to specification requirements.

**50-02 Conformity with plans and specifications.** All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross-sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans, or specifications.

If the RPR finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications, but that the portion of the work affected will, in their opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, the RPR will advise the Owner of their determination that the affected work be accepted and remain in place. The RPR will document the determination and recommend to the Owner a basis of acceptance that will provide for an adjustment in the contract price for the affected portion of the work. Changes in the contract price must be covered by contract change order or supplemental agreement as applicable.

If the RPR finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the RPR's written orders.

The term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the RPR's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's execution of the work, when, in the RPR's opinion, such compliance is essential to provide an acceptable finished portion of the work.

The term "reasonably close conformity" is also intended to provide the RPR with the authority, after consultation with the Sponsor and FAA, to use sound engineering judgment in their determinations to accept work that is not in strict conformity, but will provide a finished product equal to or better than that required by the requirements of the contract, plans and specifications.

The RPR will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

**50-03 Coordination of contract, plans, and specifications.** The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. If electronic files are provided and used on the project and there is a conflict between the electronic files and hard copy plans, the hard copy plans shall govern. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited advisory circulars (ACs); contract general provisions shall govern over plans, cited standards for materials or testing, and cited ACs; plans shall govern over cited standards for materials or testing and cited ACs. If

any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

From time to time, discrepancies within cited testing standards occur due to the timing of the change, edits, and/or replacement of the standards. If the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately ask the RPR for an interpretation and decision, and such decision shall be final.

The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, Contractor shall immediately notify the Owner or the designated representative in writing requesting their written interpretation and decision.

**50-04 List of Special Provisions.** Supplementary Conditions are included in Section 00800 of this document.

**50-05 Cooperation of Contractor.** The Contractor shall be supplied with one hard copy or an electronic PDF of the plans and specifications. The Contractor shall have available on the construction site at all times one hardcopy each of the plans and specifications. Additional hard copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and shall cooperate with the RPR and their inspectors and with other Contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as their agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the RPR or their authorized representative.

**50-06 Cooperation between Contractors.** The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

When separate contracts are let within the limits of any one project, each Contractor shall conduct the work not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with their own contract and shall protect and hold harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange their work and shall place and dispose of the materials being used to not interfere with the operations of the other Contractors within the limits of the same project. The Contractor shall join their work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

**50-07 Construction layout and stakes.** The Engineer/RPR shall establish necessary horizontal and vertical control. The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor. Contractor is responsible for preserving integrity of horizontal and vertical controls established by Engineer/RPR. In case of negligence on the part of the Contractor or their employees, resulting in the destruction of any horizontal and vertical control, the resulting costs will be deducted as a liquidated damage against the Contractor.

Prior to the start of construction, the Contractor will check all control points for horizontal and vertical accuracy and certify in writing to the RPR that the Contractor concurs with survey control established for the project. All lines, grades and measurements from control points necessary for the proper execution and control of the work on this project will be provided to the RPR. The Contractor is responsible to establish all layout required for the construction of the project.

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be provided to the RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided in the following format(s): n/a.

Laser, GPS, String line, or other automatic control shall be checked with temporary control as necessary. In the case of error, on the part of the Contractor, their surveyor, employees or subcontractors, resulting in established grades, alignment or grade tolerances that do not concur with those specified or shown on the plans, the Contractor is solely responsible for correction, removal, replacement and all associated costs at no additional cost to the Owner.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses. The cost shall be included in the price of the bid for the various items of the Contract.

**50-08 Authority and duties of Quality Assurance (QA) inspectors.** QA inspectors shall be authorized to inspect all work done and all material furnished. Such QA inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. QA inspectors are not authorized to revoke, alter, or waive any provision of the contract. QA inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

QA Inspectors are authorized to notify the Contractor or their representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the RPR for a decision.

**50-09 Inspection of the work.** All materials and each part or detail of the work shall be subject to inspection. The RPR shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the RPR requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Provide advance written notice to the RPR of work the Contractor plans to perform each week and each day. Any work done or materials used without written notice and allowing opportunity for inspection by the RPR may be ordered removed and replaced at the Contractor's expense.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

**50-10 Removal of unacceptable and unauthorized work.** All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the RPR as provided in paragraph 50-02, *Conformity with Plans and Specifications*.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

No removal work made under provision of this paragraph shall be done without lines and grades having been established by the RPR. Work done contrary to the instructions of the RPR, work done beyond the lines shown on the plans or as established by the RPR, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the RPR made under the provisions of this subsection, the RPR will have authority to cause unacceptable work to be remedied or removed and replaced; and unauthorized work to be removed and recover the resulting costs as a liquidated damage against the Contractor.

**50-11 Load restrictions.** The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel.

**50-12 Maintenance during construction.** The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

**50-13 Failure to maintain the work.** Should the Contractor at any time fail to maintain the work as provided in paragraph 50-12, *Maintenance during Construction*, the RPR shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the RPR's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the Owner, shall be recovered as a liquidated damage against the Contractor.

**50-14 Partial acceptance.** If at any time during the execution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, the Contractor may request the RPR to make final inspection of that unit. If the RPR finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the RPR may accept it as being complete, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the contract.

**50-15 Final acceptance.** Upon due notice from the Contractor of presumptive completion of the entire project, the RPR and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such

inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the RPR will notify the Contractor and the Contractor shall correct the unsatisfactory work. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the RPR will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

**50-16 Claims for adjustment and disputes.** If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, the Contractor shall notify the RPR in writing of their intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the RPR is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the RPR has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit a written claim to the RPR who will present it to the Owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

#### **END OF SECTION 50**

## Section 60 Control of Materials

**60-01 Source of supply and quality requirements.** The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish documentation to the RPR as to the origin, composition, and manufacture of all materials to be used in the work. Documentation shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the RPR's option, materials may be approved at the source of supply before delivery. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

The Contractor shall furnish airport lighting equipment that meets the requirements of the specifications; and is listed in AC 150/5345-53, *Airport Lighting Equipment Certification Program and Addendum*, that is in effect on the date of advertisement.

**60-02 Samples, tests, and cited specifications.** All materials used in the work shall be inspected, tested, and approved by the RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of the RPR shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the RPR, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of the Owner in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), federal specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the RPR. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the RPR.

A copy of all Contractor QC test data shall be provided to the RPR daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the RPR showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

**60-03 Certification of compliance/analysis (COC/COA).** The RPR may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's COC stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified. The COA is the manufacturer's COC and includes all applicable test results.



Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the RPR.

When a material or assembly is specified by “brand name or equal” and the Contractor elects to furnish the specified “or equal,” the Contractor shall be required to furnish the manufacturer’s certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

- a. Conformance to the specified performance, testing, quality or dimensional requirements; and,
- b. Suitability of the material or assembly for the use intended in the contract work.

The RPR shall be the sole judge as to whether the proposed “or equal” is suitable for use in the work.

The RPR reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

**60-04 Plant inspection.** The RPR or their authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the RPR conduct plant inspections, the following conditions shall exist:

- a. The RPR shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.
- b. The RPR shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.
- c. If required by the RPR, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Place office or working space in a convenient location with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The RPR shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

**60-05 Engineer/ Resident Project Representative (RPR) field office.** An Engineer/RPR field office is not required.

**60-06 Storage of materials.** Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the RPR. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans and/or CSPP, the storage of materials and the location of the Contractor’s plant and parked equipment or vehicles shall be as directed by the RPR. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Owner’s permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at their expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

**60-07 Unacceptable materials.** Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the RPR.

Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the RPR has approved its use in the work.

**60-08 Owner furnished materials.** The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

## **END OF SECTION 60**

## Section 70 Legal Regulations and Responsibility to Public

**70-01 Laws to be observed.** The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner and all their officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

**70-02 Permits, licenses, and taxes.** The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

**70-03 Patented devices, materials, and processes.** If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. The Contractor and the surety shall indemnify and hold harmless the Owner, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

**70-04 Restoration of surfaces disturbed by others.** The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the Owner, such authorized work (by others) must be shown on the plans and is indicated as follows: n/a/.

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the RPR.

Should the Owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such Owners by arranging and performing the work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the RPR, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

**70-05 Federal Participation.** The United States Government has agreed to reimburse the Owner for some portion of the contract costs. The contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator. No requirement of this contract shall be construed as making the United States a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

**70-06 Sanitary, health, and safety provisions.** The Contractor's worksite and facilities shall comply with applicable federal, state, and local requirements for health, safety and sanitary provisions.

**70-07 Public convenience and safety.** The Contractor shall control their operations and those of their subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to their own operations and those of their own subcontractors and all suppliers in accordance with Section 40, paragraph 40-05, *Maintenance of Traffic*, and shall limit such operations for the convenience and safety of the traveling public as specified in Section 80, paragraph 80-04, *Limitation of Operations*.

The Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of the RPR. If the RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and the Contractor is unable to respond in a prompt and reasonable manner, the RPR reserves the right to assign the task of debris removal to a third party and recover the resulting costs as a liquidated damage against the Contractor.

**70-08 Construction Safety and Phasing Plan (CSPP).** The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is on sheet(s) G002 and G003 of the project plans.

**70-09 Use of explosives.** The use of explosives is not permitted on this project.

**70-10 Protection and restoration of property and landscape.** The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer/RPR has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at their expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

**70-11 Responsibility for damage claims.** The Contractor shall indemnify and hold harmless the Engineer/RPR and the Owner and their officers, agents, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of their own contract considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, their own surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the

Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

**70-12 Third party beneficiary clause.** It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third-party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

**70-13 Opening sections of the work to traffic.** If it is necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such “phasing” of the work must be specified below and indicated on the approved Construction Safety and Phasing Plan (CSPP) and the project plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

Upon completion of any portion of work listed above, such portion shall be accepted by the Owner in accordance with Section 50, paragraph 50-14, *Partial Acceptance*.

No portion of the work may be opened by the Contractor until directed by the Owner in writing. Should it become necessary to open a portion of the work to traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the RPR, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at their expense.

The Contractor shall make their own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

The Contractor must conform to safety standards contained AC 150/5370-2 and the approved CSPP.

Contractor shall refer to the plans, specifications, and the approved CSPP to identify barricade requirements, temporary and/or permanent markings, airfield lighting, guidance signs and other safety requirements prior to opening up sections of work to traffic.

**70-14 Contractor’s responsibility for work.** Until the RPR’s final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at their own expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding, and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

**70-15 Contractor’s responsibility for utility service and facilities of others.** As provided in paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, the Contractor shall cooperate with the owner of any

public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and/or in the contract documents.

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the Owners of all utility services or other facilities of their plan of operations. Such notification shall be in writing addressed to "The Person to Contact" as provided in this paragraph and paragraph 70-04, *Restoration of Surfaces Disturbed By Others*. A copy of each notification shall be given to the RPR.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual Owners advised of changes in their plan of operations that would affect such Owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Owner of their plan of operation. If, in the Contractor's opinion, the Owner's assistance is needed to locate the utility service or facility or the presence of a representative of the Owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's "Person to Contact" no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the RPR.

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, the Contractor shall immediately notify the proper authority and the RPR and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the RPR continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or their own surety.

**70-16 Furnishing rights-of-way.** The Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

**70-17 Personal liability of public officials.** In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the Engineer, RPR, their authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

**70-18 No waiver of legal rights.** Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or stopped from recovering from the Contractor or their surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill their obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.

**70-19 Environmental protection.** The Contractor shall comply with all federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, asphalts, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

**70-20 Archaeological and historical findings.** Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the RPR. The RPR will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in Section 40, paragraph 40-04, *Extra Work*, and Section 90, paragraph 90-05, *Payment for Extra Work*. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with Section 80, paragraph 80-07, *Determination and Extension of Contract Time*.

**70-21 Insurance Requirements.** Contractor insurance requirements are included in Section 00800 of this document.

## **END OF SECTION 70**

## Section 80 Execution and Progress

**80-01 Subletting of contract.** The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

The Contractor shall perform, with his organization, an amount of work equal to at least 10] percent of the total contract cost.

Should the Contractor elect to assign their contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

**The Contractor shall provide copies of all subcontracts to the RPR 14 days prior to being utilized on the project. As a minimum, the information shall include the following:**

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

**80-02 Notice to proceed (NTP).** The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within 7 days of the NTP date. The Contractor shall notify the RPR at least 24 hours in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

**80-03 Execution and progress.** Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least 10 days prior to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least 24 hours in advance of resuming operations.



The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner.

The project schedule shall be prepared as a network diagram in Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), or other format, or as otherwise specified. It shall include information on the sequence of work activities, milestone dates, and activity duration. The schedule shall show all work items identified in the project proposal for each work area and shall include the project start date and end date.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

**80-04 Limitation of operations.** The Contractor shall control their operations and the operations of their subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct their operations within an AOA of the airport, the work shall be coordinated with airport operations (through the RPR) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the RPR and until the necessary temporary marking, signage and associated lighting is in place as provided in Section 70, paragraph 70-08, *Construction Safety and Phasing Plan (CSPP)*.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; and immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) and as listed below, cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows: n/a.

The Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction and the approved CSPP.

**80-04.1 Operational safety on airport during construction.** All Contractors' operations shall be conducted in accordance with the approved project Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) and the provisions set forth within the current version of AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a SPCD that details how it proposes to comply with the requirements presented within the CSPP.

The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures.

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP and SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time.

**80-05 Character of workers, methods, and equipment.** The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall not cause injury to previously completed work, adjacent property, or existing airport facilities due to its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

**80-06 Temporary suspension of the work.** The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for

consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

If it becomes necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

**80-07 Determination and extension of contract time.** The completion date shall be stated in the proposal and contract and shall be known as the Contract Time.

If the contract time requires extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

**Contract time based on specific completion date.** When the contract time is a specified completion date, it shall be the date on which all contract work shall be substantially complete.

If the Contractor finds it impossible for reasons beyond their own control to complete the work within the contract time as specified, or as extended in accordance with the provisions of this paragraph, the Contractor may, at any time prior to the expiration of the contract time as extended, make a written request to the Owner for an extension of time setting forth the reasons which the Contractor believes will justify the granting of their own request. Requests for extension of time, caused by inclement weather, shall be supported with National Weather Bureau data showing the actual amount of inclement weather exceeded what could normally be expected during the contract period. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the supporting documentation justify the work was delayed because of conditions beyond the control and without the fault of the Contractor, the Owner may extend the time for completion by a change order that adjusts the contract time or completion date. The extended time for completion shall then be in full force and effect, the same as though it were the original time for completion.

**80-08 Failure to complete on time.** For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due the Contractor or their own surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

Schedule	Liquidated Damages Cost	Construction Completion Date
Base Bid	\$1,000	October 31, 2023

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its rights under the contract.

**80-09 Default and termination of contract.** The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons, if the Contractor:

- a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or

- b.** Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or
- c.** 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
- d.** Discontinues the execution of the work, or
- e.** Fails to resume work which has been discontinued within a reasonable time after notice to do so, or
- f.** Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- g.** Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or
- h.** Makes an assignment for the benefit of creditors, or
- i.** For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Owner consider the Contractor in default of the contract for any reason above, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the RPR of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the RPR will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

**80-10 Termination for national emergencies.** The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the 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 price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, 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 RPR.

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their surety of its obligation for and concerning any just claim arising out of the work performed.

**80-11 Work area, storage area and sequence of operations.** The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate work in accordance with the approved CSPP and SPCD.

**END OF SECTION 80**

## Section 90 Measurement and Payment

**90-01 Measurement of quantities.** All work completed under the contract will be measured by the RPR, or their authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet (0.8 square meters) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the RPR.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

The term “lump sum” when used as an item of payment will mean complete payment for the work described in the contract. When a complete structure or structural unit (in effect, “lump sum” work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When requested by the Contractor and approved by the RPR in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RPR and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

### Measurement and Payment Terms

Term	Description
<b>Excavation and Embankment Volume</b>	In computing volumes of excavation, the average end area method will be used unless otherwise specified.
<b>Measurement and Proportion by Weight</b>	The term “ton” will mean the short ton consisting of 2,000 pounds (907 kg) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, independently certified scales by competent, qualified personnel at locations designated by the RPR. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the RPR directs, and each truck shall bear a plainly legible identification mark.
<b>Measurement by Volume</b>	Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this

<b>Term</b>	<b>Description</b>
	purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.
<b>Asphalt Material</b>	Asphalt materials will be measured by the gallon (liter) or ton (kg). When measured by volume, such volumes will be measured at 60°F (16°C) or will be corrected to the volume at 60°F (16°C) using ASTM D1250 for asphalts. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when asphalt material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, will be used for computing quantities.
<b>Cement</b>	Cement will be measured by the ton (kg) or hundredweight (km).
<b>Structure</b>	Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.
<b>Timber</b>	Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.
<b>Plates and Sheets</b>	The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.
<b>Miscellaneous Items</b>	When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.
<b>Scales</b>	<p>Scales must be tested for accuracy and serviced before use. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.</p> <p>Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted.</p>

Term	Description
	<p>In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%.</p> <p>In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded.</p> <p>Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them.</p> <p>Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.</p> <p>All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.</p>
<b>Rental Equipment</b>	<p>Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 <i>Payment for Extra Work</i>.</p>
<b>Pay Quantities</b>	<p>When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.</p>

**90-02 Scope of payment.** The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

When the “basis of payment” subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

**90-03 Compensation for altered quantities.** When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, *Alteration of Work*



*and Quantities*, will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

**90-04 Payment for omitted items.** As specified in Section 40, paragraph 40-03, *Omitted Items*, the RPR shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

Should the RPR omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the RPR's order to omit or non-perform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the RPR's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the RPR's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

**90-05 Payment for extra work.** Extra work, performed in accordance with Section 40, paragraph 40-04, *Extra Work*, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

**90-06 Partial payments.** Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the RPR, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with paragraph 90-07, *Payment for Materials on Hand*. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

a. From the total of the amount determined to be payable on a partial payment, 10 percent of such total amount will be deducted and retained by the Owner for protection of the Owner's interests. Unless otherwise instructed by the Owner, the amount retained by the Owner will be in effect until the final payment is made except as follows:

(1) Contractor may request release of retainage on work that has been partially accepted by the Owner in accordance with Section 50-14. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Owner for partially accepted work.

(2) In lieu of retainage, the Contractor may exercise at its option the establishment of an escrow account per paragraph 90-08.

b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. Contractor must provide the Owner evidence of prompt and full payment of retainage held by the prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made

an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

c. When at least 95% of the work has been completed to the satisfaction of the RPR, the RPR shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done. The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the RPR to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in paragraph 90-09, *Acceptance and Final Payment*.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

**90-07 Payment for materials on hand.** Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

a. The material has been stored or stockpiled in a manner acceptable to the RPR at or on an approved site.

b. The Contractor has furnished the RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.

c. The Contractor has furnished the RPR with satisfactory evidence that the material and transportation costs have been paid.

d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.

e. The Contractor has furnished the Owner evidence that the material stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of their responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this paragraph.

**90-08 Payment of withheld funds.** At the Contractor's option, if an Owner withholds retainage in accordance with the methods described in paragraph 90-06 *Partial Payments*, the Contractor may request that the Owner deposit the retainage into an escrow account. The Owner's deposit of retainage into an escrow account is subject to the following conditions:

- a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.
- b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.
- c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.
- d. The Contractor shall obtain the written consent of the surety to such agreement.

**90-09 Acceptance and final payment.** When the contract work has been accepted in accordance with the requirements of Section 50, paragraph 50-15, *Final Acceptance*, the RPR will prepare the final estimate of the items of work actually performed. The Contractor shall approve the RPR's final estimate or advise the RPR of the Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the RPR shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the RPR's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the RPR's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

After the Contractor has approved, or approved under protest, the RPR's final estimate, and after the RPR's receipt of the project closeout documentation required in paragraph 90-11, *Contractor Final Project Documentation*, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of Section 50, paragraph 50-16, *Claims for Adjustments and Disputes*, or under the provisions of this paragraph, such claims will be considered by the Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

**90-10 Construction warranty.**

- a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.
- b. This warranty shall continue for a period of one year from the date of final acceptance of the work, except as noted. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Owner takes possession.
- c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner real or personal

property, when that damage is the result of the Contractor's failure to conform to contract requirements; or any defect of equipment, material, workmanship, or design furnished by the Contractor.

**d.** The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

**e.** The Owner will notify the Contractor, in writing, within seven (7) days after the discovery of any failure, defect, or damage.

**f.** If the Contractor fails to remedy any failure, defect, or damage within 14 days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

**g.** With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.

**h.** This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

**90-11 Contractor Final Project Documentation.** Approval of final payment to the Contractor is contingent upon completion and submittal of the items listed below. The final payment will not be approved until the RPR approves the Contractor's final submittal. The Contractor shall:

**a.** Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.

**b.** Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors.

**c.** Complete final cleanup in accordance with Section 40, paragraph 40-08, *Final Cleanup*.

**d.** Complete all punch list items identified during the Final Inspection.

**e.** Provide complete release of all claims for labor and material arising out of the Contract.

**f.** Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project.

**g.** When applicable per state requirements, return copies of sales tax completion forms.

**h.** Manufacturer's certifications for all items incorporated in the work.

**i.** All required record drawings, as-built drawings or as-constructed drawings.

**j.** Project Operation and Maintenance (O&M) Manual(s).

**k.** Security for Construction Warranty.

**l.** Equipment commissioning documentation submitted, if required.

## **END OF SECTION 90**



## SECTION 00800 - SPECIAL PROVISIONS

### BISHOP INTERNATIONAL AIRPORT AUTHORITY BISHOP INTERNATIONAL AIRPORT

#### SECTION 1

#### PROJECT INFORMATION

**1. CONTRACT PROVISIONS.** The General Provisions and these Special Provisions are applicable to all divisions and sections of the Contract Documents and Specifications. It shall be the Contractor's responsibility to so inform all parties who should be bound or influenced thereby.

In the event there are discrepancies between the technical specifications, general provisions, and the special provisions, the interpretation most advantageous to the Owner shall apply.

**2. DESCRIPTION OF WORK.** The proposed Work is described in the Invitation to Bid herein.

**3. LOCATION OF THE WORK.** The site of the proposed Work is at the **Bishop International Airport**.

**4. DEFINITIONS.**

**A. ADDENDA.** Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the bidding documents or the Contract Documents.

**B. BID.** The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work and services to be performed.

**C. DAY.** Unless otherwise defined shall mean "calendar" day.

**D. DRAWINGS.** The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by the Engineer and are referred to in the Contract Documents.

**E. ENGINEER.** The term "Engineer" in the Contract Documents means RS&H Michigan, Incorporated, G-3101 West Bristol Road, Suite 300, Flint, Michigan 48507.

**F. FIELD ORDER.** A written order issued by the Engineer which orders minor changes in the work consistent with the intent of the Contract Documents, but which does not involve a change in the Contract Price or the Contract Time.

The Engineer may authorize minor changes in the work not involving an adjustment in the contract price or the contract time, which are consistent with the overall intent of the Contract Documents. These may be accomplished by a field order and shall be binding on the Owner, and on the Contractor who shall perform the change promptly. If the Contractor believes that a field order justifies an increase in the contract price or contract time, the Contractor shall make a claim under Section 50, Subsection 50-16, Claims for Adjustment and Disputes of the General Provisions before doing the Work.

**G. FURNISH or INSTALL or PROVIDE or SUPPLY.** Unless specifically limited in the context, the word "Furnish" or the word "Install" or the word "Provide" or the word "Supply" or any

combination or similar directive or usage thereof, shall mean FURNISHING AND INCORPORATION IN THE WORK including all necessary labor, materials, equipment, and anything necessary to perform the work indicated.

**H. GOOD REPAIR.** Good repair shall be construed to mean any defect, functional or structural deterioration (except that from ordinary and reasonable use) which appreciably reduces the effectiveness or efficiency of the work or improvement for the purpose intended, or any serious departure from the standards of original construction described in the Contract Documents, shall be remedied by the Contractor. Such remedy will be made without further cost to the Owner, including in part, all damages caused by such defect, deficiency, deterioration, or departure, and by its repair, replacement or correction.

**I. MAY.** Permissive.

**J. REFERENCE TO TRADE OR SUBCONTRACTORS.** When only one principal contract exists for all work covered by the Contract Documents, reference to trade or subcontractors in the Contract Documents shall not create any contractual relationship between the Owner and any trade or subcontractor, with whom the principal contractor may subcontract.

**K. SAMPLES.** Samples are physical examples furnished or constructed by the Contractor to illustrate materials, equipment, workmanship or finishes, and to establish standards by which the work will be judged.

**L. "SHALL" IMPLIED.** In the interest of conciseness, some sentences, statements, and clauses used in the specifications exclude any form of the verb "shall" normally expressed in a verb phrase with verbs such as "furnish", "install", "provide", "perform", "construct", "erect", "comply", "apply", "submit", or similar "verb", but any such sentences, statements, and clauses shall be interpreted to include the applicable form of the phrase "The Contractor shall" and the requirements described therein shall be interpreted as mandatory elements of the Contract.

**M. SHALL.** Mandatory.

**N. SUBCONTRACTOR.** Party supplying labor and material or any labor for work at the site of the project for, and under separate contract or agreement with the Contractor. Nothing contained in the Contract Documents shall create any contractual relationship between the Owner and any subcontractor.

**O. SUBSTANTIAL COMPLETION.** When the work is sufficiently complete so it may be safely, conveniently and beneficially utilized by the Owner for all of the purposes for which it was intended.

**P. WILL.** Mandatory.

**Q. SEDIMENT.** Soil and other debris that have eroded and have been transported by runoff water or wind.

**R. SOLID WASTES.** Rubbish, debris, and other discarded solid materials, except hazardous waste as defined in paragraph entitled, "Hazardous Waste," resulting from industrial, commercial, and agricultural operations and from community activities.

**S. RUBBISH.** Combustible and noncombustible wastes including paper, boxes, glass, crockery, metal, lumber, cans, and bones.

**T. DEBRIS.** Combustible and noncombustible wastes such as ashes and waste materials resulting from construction or maintenance and repair work, leaves, and tree trimmings.

**U. CHEMICAL WASTES.** Salts, acids, alkalis, herbicides, pesticides, and organic chemicals.

**V. SEWAGE.** Waste characterized as domestic sanitary sewage.

**W. GARBAGE.** Refuse and scraps resulting from consumption of food.

**X. HAZARDOUS WASTES.** Hazardous substances as defined in 40 CFR 261 or as defined by applicable state and local regulations.

**Y. OILY WASTES.** Petroleum products and bituminous materials.

**Z. HAZARDOUS MATERIALS.** As defined in DOT Regulation 49 CFR 171 and listed in CFR 172.

**AA. HAZARDOUS SUBSTANCES.** As defined in EPA PL 96-510.

**5. APPLICABLE DRAWINGS.** The drawings applicable to this project are included in the Index of Drawings as included herein.

**6. PROPOSAL REQUIREMENTS.** In addition to those herein before described items to be submitted with the Bidder's Proposal, the Bidder shall submit, with his Proposal, a list of all Subcontractors the Bidder proposes to use on the Work of this Contract.

After the Sponsor accepts the Bidder's Proposal and such Bidder is awarded a Contract, the successful Bidder may not substitute a Subcontractor listed in the Proposal without the prior written approval of the Owner. Such approval shall be obtained at least ten Calendar Days prior to the date scheduled for that Subcontractor to begin Work.

**7. CONTRACTOR'S LIABILITY INSURANCE.** The following provisions supplement the requirements specified in Special Provisions--Section 2.

The Contractor shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them or by any one for whose acts any of them may be liable:

(1) Claims under workmen's compensation, disability benefit and other similar employee benefits acts;

(2) Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees;

(3) Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees;

(4) Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (2) by any other person; and



(5) Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

General notes regarding liability:

(a) The Comprehensive General Liability policy shall include explosion, collapse, and underground (X-C-U) coverage.

(b) The Contractual Liability shall include provisions for covering the indemnity specified under Paragraph 70-11 "Responsibility for Damage Claims" of the General Provisions.

(c) Comprehensive Automobile Liability shall include owned, leased, nonowned, and hired vehicles.

(d) The Comprehensive General Liability and Automobile Liability insurance shall include Contingent Liability and Contingent Property Damage Insurance to protect the Contractor against claims arising from the operations of Subcontractors, suppliers, vendors, or any person, firm or entity providing service to the Contractor.

(e) The Contractor's General Liability insurance shall include coverage to protect the Sponsor, Owner and Engineer from damage resulting either directly or indirectly from acts or omissions of the Contractor to existing buildings near the Work of the Contractor under the Contract, and the contents of such buildings.

(f) Certificates of the Contractor's Comprehensive Liability insurance, Comprehensive Automobile Liability insurance and Workmen's Compensation insurance shall be furnished to the Owner prior to commencement of Work. The certificates of insurance shall contain a provision that coverage afforded under the policies will not be canceled until at least 30 days prior written notice has been given to the Owner.

(g) Certificates of insurance shall be executed on AIA Document G705.

## **8. ACCESS TO THE WORK.**

Access to the Work shall be via the access routes designated on the Contract Layout Plan. The Contractor shall identify access routes with suitable signs, barricades, and similar equipment. Access gates shall be locked and secured when not attended by the Contractor. The entire access route and construction site shall be kept free and clean of all debris at all times and maintained in good repair by the Contractor. All damage to the access route caused by the actions of the Contractor or his agents shall be immediately repaired to the satisfaction of the Owner.

No separate payment will be made for complying with the requirements of this paragraph "Access to the Work." No other access to these Work sites will be permitted without written approval of the Engineer. Contractor's vehicles and equipment, including vehicles and equipment of the Subcontractors and others coming under the Contractor's control, will not be permitted to traverse other airfield areas or pavements without written approval of the Engineer. Contractor's vehicles, equipment and materials may be stored in the area designated on the Plans. Upon completion of the Work, the storage area shall be cleaned up and returned to its original condition to the satisfaction of the Owner. No separate payment will be made for cleanup and restoration of the storage area. Personal services, such as canteen trucks, will not be permitted beyond this area and drivers of vehicles being operated beyond this area shall be subject to loss of permission to enter the construction site.

## 9. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

(1) Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

(2) Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, or other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

(3) Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

(4) The Contractor shall review, approve, and submit, with reasonable promptness and in such sequence as to cause no delay in the Work or in the Work of the Owner or any other separate Contractor(s), all Shop Drawings, Product Data and Samples required by the Contract Documents.

(5) By approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that he has determined and verified all materials, field measurements and field construction criteria related thereto, or will do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

(6) The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Engineer's approval of Shop Drawings, Product Data or Samples unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submission and the Engineer has given written approval of the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in the Shop Drawings, Product Data or Samples by the Engineer's approval thereof.

(7) The Contractor shall direct specific attention, in writing, or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Engineer on previous submittals.

(8) No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittals have been approved by the Engineer. All such portions of the Work shall be in accordance with approved submittals.

(9) The Contractor shall not reproduce the Engineer's project drawings for Shop Drawing use without written approval of the Engineer.

(10) The Contractor shall submit shop drawings per the individual technical specifications contained herein. Shop Drawings shall be forwarded to **RS&H, G-3101 W. Bristol Road, Suite 300, Flint, Michigan 48507**, marked to the attention of **David M. Joye, PE**. The Contractor's letter of submittal must conform to the typical Contractor's "Transmittal Letter" which is available from the Engineer. Each drawing or part of the brochure shall be listed separately on the letter and identified as indicated thereon. Failure to do this will cause rejection of the submittal. The Engineer will return to the Contractor the same transmittal letter, with the Shop Drawing disposition noted thereon along with the drawings or brochures when the review is completed. The Contractor shall forward separate transmittal letters for submitting each group of Shop Drawings common to a Specification Section.

(11) In checking Shop Drawings prior to submittal, the Contractor is requested to note corrections or comments on the drawings.

(12) Drawings returned to the Contractor will be stamped "Approved," "Approved as Noted," "Returned for Corrections," or "Not Approved." Drawings stamped "Approved as Noted" need not be returned for further approval if the notations are acceptable to the Contractor and Subcontractors. Drawings stamped "Returned for Corrections" or "Not Approved" shall require new submission. Comments and corrections by the Engineer will be made in red pencil on blue or black line prints and in yellow pencil on white line prints.

(13) Samples shall be submitted to the attention of David M. Joye, PE, accompanied with the same transmittal letter prescribed for Shop Drawings. Checking by Contractor of samples before transmittal is required the same as for Shop Drawings.

## **10. PROJECT DOCUMENTATION.**

(a) Project Drawings: A field set of Plans and Specifications, supplied by the Contractor, shall remain on the job site at all times and shall be available at all times to the Engineer.

The Contractor shall immediately include plainly and conspicuously on the field set of drawings, and at appropriate paragraphs in the specifications, all changes or corrections made by addenda and Change Orders as they are issued.

Approved copies of all shop drawings and other submittals are to be kept on the job site at all times and shall be available at all times to the Engineer.

Changes and deviations from the existing conditions shall be submitted in writing for approval prior to installation. In no case shall any unspecified equipment or materials be installed without prior approval by the Engineer.

(b) Record Documents:

(1) Definition: Record copies are defined to include those documents or copies relating directly to performance of the Work, which Contractor is required to prepare or maintain for Owner's records, recording the Work as actually performed. Record copies show changes in the Work in relation to way in which shown and specified by original Contract Documents; and show additional information of value to Owner's records, but not indicated by original Contract Documents. Record copies include newly prepared drawings (if any are specified), marked-up copies of Contract drawings, shop drawings, Specifications, addenda and Change Orders, marked-up product data submittals, record samples, field records for variable and concealed conditions such as excavations and foundations, and miscellaneous record information on Work which is otherwise recorded only schematically or not at all.

(2) Record Drawings: Contractor shall maintain a set of record drawings at the job site. These shall be kept legible and current and shall be available for inspection at all times by the Engineer. The Contractor shall show all changes or Work added on these record drawings in a contrasting color.

## **11. FINAL CLEANING.**

(a) Provide final cleaning of the Work, at time indicated, consisting of cleaning each surface or unit of Work to normal "clean" condition.

(b) Removal of Protection: Remove temporary protection devices and facilities which were installed during course of the Work to protect previous completed Work during remainder of construction period.

(c) Compliances: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at site, or bury debris or excess materials on Owner's property, or discharge volatile or other harmful or dangerous materials into drainage systems; remove waste materials from site and dispose of in a lawful manner.

Where extra materials of value remaining after completion of associated Work have become Owner's property, dispose of these as directed by owner.

#### **END OF SPECIAL PROVISIONS - SECTION 1**

## **SPECIAL PROVISIONS**

### **BISHOP INTERNATIONAL AIRPORT AUTHORITY BISHOP INTERNATIONAL AIRPORT**

#### **SECTION 2**

#### **INSURANCE REQUIREMENTS**

**1. REQUIREMENTS OF CONTRACTOR LIABILITY INSURANCE.** The Contractor shall procure and maintain at his own expense, during the life of this Contract, liability insurance with limits of coverage not less than the amounts as hereinafter specified. The policies shall be written by reputable companies authorized to do business in the State of Michigan, rated no less than A-9 by A.M. BEST. All such insurance shall be subject to the approval of the Owner for adequacy of protection and shall include a provision preventing cancellation without thirty days prior notice to the Owner in writing. At the time of execution of the Contract, the successful Bidder shall furnish the Owner evidence that appropriate insurance has been procured and will be maintained for the life of the Contract liability and compensation insurance.

The Contractor will provide protection from claims set forth below which may arise out of or result from the Contractor's performance and furnishing of the Work and the Contractor's other obligations under the Contract as follows:

1. Commercial General Liability - \$1,000,000 per loss for bodily injury, personal injury and property damage. If a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability - \$ 1,000,000 per accident for bodily injury and property damage,
3. Employer's Liability - \$ 1,000,000 per accident for bodily injury or disease.
4. Umbrella Liability - \$ 5,000,000 aggregate limit.
5. Workers' Compensation coverage as required by law.
6. The Contractor will be required to provide a Certificate of Insurance and a copy of the additional insured endorsement, indicating:
  - Commercial General Liability insurance, including contractual liability, and defense costs outside of policy limits. Contractor's policy will be primary and be on an occurrence basis.
  - Automobile Liability insurance
  - Umbrella Liability insurance
  - Workers' Compensation insurance

In carrying out any of the Contract provisions or in exercising any power or authority granted to the Contractor by this Contract, there shall be no liability upon the Engineer, his authorized representatives, or any official of the Owner, either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner. THE CITY OF FLINT,

COUNTY OF GENESEE, THE **BISHOP INTERNATIONAL AIRPORT AUTHORITY** AND THE ENGINEER SHALL BE AN ADDITIONAL INSURED AND PROTECTED, IN THE CONTRACTOR'S LIABILITY INSURANCE POLICY, FROM ALL CLAIMS ARISING OUT OF, OR IN CONNECTION WITH, ANY OPERATIONS CONDUCTED IN CONNECTION WITH THIS CONTRACT BY THE CONTRACTOR OR HIS SUBCONTRACTORS.

**END OF SPECIAL PROVISIONS - SECTION 2**

## **SPECIAL PROVISIONS**

### **BISHOP INTERNATIONAL AIRPORT AUTHORITY BISHOP INTERNATIONAL AIRPORT**

#### **SECTION 3**

##### **MISCELLANEOUS**

**1. BID AND CONTRACT ACCEPTANCE.** The Bishop International Airport Authority reserves the following rights: to accept or reject any or all bids; and to award the Contract to the most responsive and responsible Bidder whose bid is determined by the Authority to be in its best interest. Any and all proposals as submitted herein are subject to further negotiation at the option of Authority. Further, any and all agreements arising out of these proposals and negotiations shall not be binding or valid against the Authority, its department, officers, employees, or agents unless fully executed in writing and authorized by the Bishop International Airport Authority Board of Directors.

**2. PROVISIONS REQUIRED BY LAW DEEMED INSERTED.** Each and every provision of law and clause required by law to be inserted in the Contract Documents shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein. If, for any reason, any such provision is not inserted in the Contract, or is not correctly inserted, then upon application of either party, the Contract shall forthwith be physically amended to make such insertion or correction.

##### **3. CORRELATION OF DOCUMENTS.**

**A.** The drawings and specifications are cooperative and supplementary. Portions of the work which can be best be illustrated by the drawings may not be included in the specifications and portions best described by the specifications may not be depicted on the drawings. All items necessary or incidental to completely construct or erect the work shall be furnished, whether called for in the specifications or shown on the drawings. Anything mentioned in the specifications and not shown on the drawings, or anything shown or mentioned on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both.

**B.** In case of disagreement between the drawings and specifications, or within either document itself, the better quality or greater quantity of work shall be estimated and included in the bid and contract price and the matter drawn to the Engineer's attention for decision.

**4. NOTICE AND SERVICE THEREOF.** Where the manner of giving notice is not otherwise provided for in the Contract Documents, any notice to the Contractor from the Owner relative to any part of the Contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to the Contractor at the address given in the Contractor's proposal, or at the last business address known to him who gives the notice, or delivered in person to the Contractor or his authorized representative on the site. It is mutually agreed that such notice shall be sufficient and adequate.

##### **5. SUBCONTRACTING.**

**A.** The Contractor may utilize the services of specialty or minority subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty or minority subcontractors.

**B.** The Owner reserves the right to approve subcontractors for any work. The Contractor, if requested by the Owner, shall submit to the Owner the proposed award and such information as the Owner may require concerning any subcontractor.

**C.** The Contractor shall be as fully responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, or under their control, as he is for the acts and omissions of persons directly employed by him.

**D.** The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the work of subcontractors, and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents.

**E.** Nothing contained in the Contract Documents shall create any contractual relationships between any subcontractor and the Owner.

## **6. PROTECTION OF PERSONS.**

**A.** The Contractor shall:

(1) At all times protect the lives and health of his employees under the Contract;

(2) Take all necessary precautions for the safety of all persons on or in the vicinity of the project site.

(3) Comply with all applicable provisions of Federal, State and Municipal safety laws and building codes.

(4) Comply with all pertinent provisions of the Manual of Accident Prevention in Construction issued by the Associated General Contractors of America, Inc., latest edition, to prevent accidents or injury to persons on or about or adjacent to the premises where the work is being performed. He shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of persons and shall post danger signs warning against the hazards created in part by features of construction such as protruding nails, rod hoists, well holes, falling materials, etc., and he shall designate a responsible member of his organization on the work site whose duty shall be the prevention of accidents;

(5) Provide for all safeguards for the protection of those having Right-of-Entry during field review and observation of the work.

**B.** The Contractor shall comply with all provisions of the "Williams-Steiger Occupational Safety and Health Act of 1970" including any amendments thereto and rules and regulations issued pursuant thereto, applicable to the Work and performance of the Contract. Where a State in which work is performed has passed legislation bearing on Occupational Safety and Health, such legislation and amendments thereto, together with rules and regulations issued pursuant thereto, shall be complied with by the Contractor.

## **7. AUTHORITY OF ENGINEER.**

**A.** The Engineer, through its duly authorized representatives, shall furnish engineering services during construction of the work to the extent provided in the Contract Documents. He shall observe and review the work in the process of construction or erection. Compliance with the Contract Documents



shall be the Contractor's responsibility notwithstanding such observation or review. The Engineer has authority to recommend suspension of the work to the Owner when it appears such suspension may be necessary to accomplish the proper implementation of the intent of the Contract Documents. The authority to observe, review or recommend suspension of the work, or exercise such other authority as may be granted by the Contract Documents, shall not be construed or interpreted to mean supervision of construction, which is the Contractor's responsibility, nor make the Engineer responsible for providing a safe place for the performance of work by the Contractor or by the Contractor's employees, or those of suppliers or subcontractors, or for access, visits, use, work, travel, or occupancy by any other person. The Engineer shall also have the authority to reject any work, materials, or equipment which do not conform to the Contract Documents and to decide technical questions which arise in the execution of the work.

**B.** The Engineer shall determine the amount, quality, acceptability, and fitness of the several kinds of work, materials, equipment and supplies which are to be paid for under the Contract and shall decide questions which may arise in relation to said work and its compliance with the Contract Documents. The Engineer's estimates and decisions shall be final and conclusive, except as otherwise expressly provided in case any question shall arise between the parties to the Contract relative to the Contract Documents, the determination or decision of the Engineer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under the Contract affected in any manner or to any extent by such question.

**C.** The Engineer shall decide the meaning and intent of any portion of the Contract Documents where the same may be found obscure or be in dispute.

#### **8. "GOOD REPAIR" PERIOD.**

**A.** The Contractor hereby agrees to keep all work constructed under the Contract in good repair for a minimum period of one (1) year, unless a longer period is otherwise specified in the Contract Documents, from the date of acceptance of all of the work by the Owner. No provision of the Contract documents shall be valid which limits the "Good Repair" period to less than one (1) year from the date of acceptance of all of the work by the Owner. The work may be phased. If the work is phased, each phase of Work completed shall be inspected and approved for use by the Owner but shall not be accepted until all work for all phases is complete and a final inspection for all work has been performed.

**B.** It is intended that this provision shall apply whether or not bond is required, as a personal obligation of the Contractor.

**C.** The obligations of the Contractor as herein provided shall be in addition to and not in limitation of any obligations imposed upon him by special guarantees required by the Contract Documents or otherwise prescribed by law.

**9. VARIATION FROM ESTIMATED QUANTITIES.** The Contractor may reasonably expect a variation in estimated quantities such that the total payment for the completed work may range from 75 to 125 percent of the total amount of the Contract based on the estimated quantities defined in the proposal. The Contractor will not be allowed any claims for anticipated profits, for loss of profits, or for any damages because of a difference between the estimate of any item defined in the proposal and the amount of the item actually required or for the elimination of any part of the work. Funds for construction of the work herein contemplated are limited. The Owner reserves the right to eliminate or reduce the items of the proposal or any of the work as may be required to bring the cost of the work within the limits of available funds.

**10. WATER FOR CONSTRUCTION.** Water used for construction of this project will be furnished by the Contractor. The Contractor shall make the necessary arrangements with the Owner of the source of water for securing and/or transporting such water. No separate payment will be made for water used but the cost thereof shall be included in the various items of the proposal and bid schedule.

**11. LIGHTS AND POWER.** The Contractor shall provide, at his own expense, temporary lighting and facilities required for the proper prosecution and inspection of the work.

**12. COORDINATION WITH OTHERS.** In the event other contractors are doing work in the same area simultaneously with this project, the Contractor shall coordinate his proposed construction with that of the other contractors. The Contractor shall notify the Engineer of said coordination attempts and the results.

**13. PROPERTY LINES AND MONUMENTS.** The Contractor shall protect all property corner markers and any other monument, and when any such markers or monuments are in danger of being disturbed, they shall be properly referenced and if disturbed shall be reset at the expense of the Contractor.

**14. FENCES AND DRAINAGE CHANNELS.** Boundary fences or other improvements removed to permit the installation of the work shall be replaced in the same location and left in a condition as good or better than that in which they were found. Existing fences not to be removed and intersecting with new fencing (fencing outside airport property) shall be connected to the new fencing in a manner acceptable to the fence owner and the Owner and/or Engineer.

Where surface drainage channels are disturbed or blocked during construction, they shall be restored to their original condition of grade and cross section after the work of construction is completed.

**15. AIR POLLUTION.** The Contractor shall comply with all Federal, State and Local Requirements.

**16. EXISTING UTILITIES AND SERVICE LINES.** The Contractor shall be responsible for the protection of all existing utilities or service lines crossed or exposed by his construction operations. Where existing utilities or service lines are cut, broken or damaged, the Contractor shall replace or repair the utilities or service lines with the same type of original material and construction, or better, at his own cost and expense, with the exception of those items included in the bid schedule.

**17. RECORDS OF MATERIALS PURCHASED.** By a certain time, each month as defined and established at the preconstruction conference, the Contractor shall furnish to the Engineer, duplicate copies of all invoices for materials furnished to be incorporated into the work, plus a statement of all materials previously included on monthly estimates and incorporated into the work during the preceding month. This information is to be used to determine the value of materials on hand to be included in the monthly estimate for periodical payment.

**18. CONTRACTOR ACCESS TO PROJECT SITE.** The Contractor shall have a specific access route to the project site. This route is shown in the construction drawings. The Contractor shall use this route to bring all equipment and materials in. If the Contractor has a better route that will prevent damage to existing roads or provide safer access to the construction site, the Contractor shall supply a drawing showing the recommended route to the Owner and Engineer for approval at the preconstruction conference.

**19. NIGHTTIME WORK.** Work requiring nighttime work, and nighttime work procedures are shown in the phasing plans and in the CSPP contained within.

**20. DUST CONTROL.** The Contractor shall maintain strict dust control per the CSPP contained within.

**21. TRIP TICKETS, INVOICES, WEIGH BILLS, ETC.** The Contractor shall be responsible for supplying any and all trip tickets, invoices, weigh bills, etc. which show the quantities actually used in the construction of the project. All said trip tickets, invoices, weigh bills, etc. shall relate directly to specific bid items. If the Contractor fails to submit said trip tickets, invoices, weigh bills, etc. to the Engineer or his authorized representative prior to or during the time of installation of materials into the project, any material overruns claimed by the Contractor at the end of the project shall not be accepted.

**END OF SPECIAL PROVISIONS - SECTION 3**

## **SPECIAL PROVISIONS**

### **BISHOP INTERNATIONAL AIRPORT AUTHORITY BISHOP INTERNATIONAL AIRPORT**

#### **SECTION 4**

##### **LISTING OF DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF THE RESIDENT PROJECT REPRESENTATIVE**

The Owner and/or Engineer shall furnish a Resident Project Representative (RPR), assistants and other field staff to assist the Engineer in observing performance of the Work of the Contractor.

Through more extensive on-site observations of the Work in progress and field checks of materials and equipment by the RPR and assistants, the Engineer shall endeavor to provide further protection for the Owner against defects and deficiencies in the Work; but, the furnishing of such services will not make the Engineer responsible for or give the Engineer control over construction means, methods, techniques, sequences or procedures or for safety precautions or programs, or responsibility for the Contractor's failure to perform the Work in accordance with the Contract Documents.

The duties and responsibilities of the RPR are limited to those of the Engineer in the Engineer's agreement with the Owner and in the construction Contract Documents, and are further limited and described as follows:

A. General

The RPR is the Engineer's agent at the site, will act as directed by and under the supervision of the Engineer, and will confer with the Engineer regarding the RPR's actions. The RPR's dealings in matters pertaining to the on-site Work shall in general be with the Engineer and the Contractor keeping the Owner advised as necessary. The RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of the Contractor. The RPR shall generally communicate with the Owner with the knowledge of and under the direction of the Engineer.

B. Duties and Responsibilities of the RPR

1. Schedules: Review the progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by the Contractor and consult with the Engineer concerning acceptability.
2. Conferences and Meetings: Attend meetings with the Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.
3. Liaison:
  - a. Serve as the Engineer's liaison with the Contractor, working principally through the Contractor's superintendent and assist in understanding the intent of the Contract Documents; and assist the Engineer in serving as the Owner's liaison with the Contractor when the Contractor's operations affect the Owner's on-site operations.

- b. Assist in obtaining from the Owner additional details or information, when required for proper execution of the Work.
- 4. Shop Drawings and Samples:
  - a. Record date of receipt of Shop Drawings and samples.
  - b. Receive samples which are furnished at the site by the Contractor and notify the Engineer of availability of samples for examination.
  - c. Advise the Engineer and the Contractor of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been approved by the Engineer.
- 5. Review of Work, Rejection of Defective Work, Inspections and Tests:
  - a. Conduct on-site observations of the Work in progress to assist the Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
  - b. Report to the Engineer whenever the RPR believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise the Engineer of Work that the RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
  - c. Verify that tests, equipment and systems startups and operating and maintenance training are conducted in the presence of appropriate personnel, and that the Contractor maintains adequate records thereof; and observe, record and report to the Engineer appropriate details relative to the test procedures and startups.
  - d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of those inspections and report to the Engineer.
- 6. Interpretation of Contract Documents: Report to the Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to the Contractor clarifications and interpretations as issued by the Engineer.
- 7. Modifications: Consider and evaluate the Contractor's suggestions for modifications in Drawings or Specifications and report with the RPR's recommendations to the Engineer. Transmit to the Contractor decisions as issued by the Engineer.
- 8. Records:
  - a. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the

Contract, the Engineer's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.

- b. Keep a diary or logbook, recording the Contractor hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders or changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to the Engineer.
- c. Record names, addresses and telephone numbers of all the Contractors, Subcontractors and major suppliers of materials and equipment.

9. Reports:

- a. Furnish the Engineer periodic reports as required of progress of the Work and of the Contractor's compliance with the progress schedule and schedule of Shop Drawing and sample submittals.
- b. Consult with the Engineer in advance of scheduled major tests, inspections or start of important phases of the Work.
- c. Draft proposed Change Orders and Work Directive Changes, obtaining backup material from the Contractor and recommend to the Engineer Change Orders, Work Directive Changes, and Field Orders.
- d. Report immediately to the Engineer and the Owner upon the occurrence of any accident.

10. Payment Requests: Review applications for payment with the Contractor for compliance with the established procedure for their submission and forward with recommendations to the Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the site but not incorporated in the Work.

11. Certificates, Maintenance and Operation Manuals: During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by the Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to the Engineer for review and forwarding to the Owner prior to final payment for the Work.

12. Completion:

- a. Before the Engineer issues a Certificate of Substantial Completion, submit to the Contractor a list of observed items requiring completion or correction.
- b. Conduct final inspection in the company of the Engineer, the Owner and the Contractor and prepare a final list of items to be completed or corrected.
- c. Observe that all items on final list have been completed or corrected and make recommendations to the Engineer concerning acceptance.

C. Limitations of Authority of the Resident Project Representative:

1. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by the Engineer.
2. Shall not exceed limitations of the Engineer's authority as set forth in the Contract Documents.
3. Shall not undertake any of the responsibilities of the Contractor, Subcontractors, or the Contractor's superintendent.
4. Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.
5. Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.
6. Shall not accept Shop Drawing or sample submittals from anyone other than Contractor.
7. Shall not authorize the Owner to occupy the Project in whole or in part.
8. Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by the Engineer.

**END OF SPECIAL PROVISIONS - SECTION 4**

**BISHOP INTERNATIONAL AIRPORT  
TERMINAL ROOF REPLACEMENT PROJECT  
FLINT, MICHIGAN**

**SECTION 00900 – MANDATORY  
CONTRACT PROVISIONS**

**A1 ACCESS TO RECORDS AND REPORTS**

**A1.1 SOURCE**

2 CFR § 200.333

2 CFR § 200.336

FAA Order 5100.38

**A1.2 CONTRACT CLAUSE**

**ACCESS TO RECORDS AND REPORTS**

The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the Owner, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.



## **A2 AFFIRMATIVE ACTION REQUIREMENT**

### **A2.1 SOURCE**

41 CFR part 60-4

Executive Order 11246

### **A2.2 SOLICITATION CLAUSE**

#### **NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION to ENSURE EQUAL EMPLOYMENT OPPORTUNITY**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

#### **Timetables**

Goals for minority participation for each trade: **5.0%**

Goals for female participation in each trade: **6.9%**

These goals are applicable to all of the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a) and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this notice and in the contract resulting from this solicitation, the “covered area” is Michigan, Genesee County, and Flint.

## **A3 BREACH OF CONTRACT TERMS**

### **A3.1 SOURCE**

2 CFR § 200 Appendix II(A)

### **A3.2 CONTRACT CLAUSE**

#### **BREACH OF CONTRACT TERMS**

Any violation or breach of terms of this contract on the part of the Contractor or its subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement.

Owner will provide Contractor written notice that describes the nature of the breach and corrective actions the Contractor must undertake in order to avoid termination of the contract. Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner's notice will identify a specific date by which the Contractor must correct the breach. Owner may proceed with termination of the contract if the Contractor fails to correct the breach by the deadline indicated in the Owner's notice.

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law.

## **A4 BUY AMERICAN PREFERENCE**

### **A4.1 SOURCE**

Title 49 USC § 50101

### **A4.2 SOLICITATION CLAUSE**

#### **A4.2.1 Buy American Preference Statement**

##### **BUY AMERICAN PREFERENCE**

The Contractor agrees to comply with 49 USC § 50101, which provides that Federal funds may not be obligated unless all steel and manufactured goods used in AIP funded projects are produced in the United States, unless the Federal Aviation Administration has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

A bidder or offeror must complete and submit the Buy America certification included herein with their bid or offer. The Owner will reject as nonresponsive any bid or offer that does not include a completed Certificate of Buy American Compliance.

#### **A4.2.2 Certificate of Buy American Compliance – Total Facility**

##### **CERTIFICATE OF BUY AMERICAN COMPLIANCE FOR TOTAL FACILITY**

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with its proposal. The bidder or offeror must indicate how it intends to comply with 49 USC § 50101 by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e. not both) by inserting a checkmark (✓) or the letter “X”.

- ☐ Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:
- a) Only installing steel and manufactured products produced in the United States; or
  - b) Installing manufactured products for which the Federal Aviation Administration (FAA) has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
  - c) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

- To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
- To faithfully comply with providing U.S. domestic products.
- To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

☐ The bidder or offeror hereby certifies it cannot comply with the 100 percent Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:

- a) To submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that supports the type of waiver being requested.
- b) That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination that may result in rejection of the proposal.
- c) To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.
- d) To furnish U.S. domestic product for any waiver request that the FAA rejects.
- e) To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

### **Required Documentation**

**Type 3 Waiver** – The cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components and subcomponents of the “facility”. The required documentation for a Type 3 waiver is:

- a) Listing of all manufactured products that are not comprised of 100 percent U.S. domestic content (excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety).
- b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly and installation at project location.
- c) Percentage of non-domestic component and subcomponent cost as compared to total “facility” component and subcomponent costs, excluding labor costs associated with final assembly and installation at project location.

**Type 4 Waiver** – Total cost of project using U.S. domestic source product exceeds the total project cost using non-domestic product by 25 percent. The required documentation for a Type 4 of waiver is:

- a) Detailed cost information for total project using U.S. domestic product
- b) Detailed cost information for total project using non-domestic product

**False Statements:** Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

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Date

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Signature

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Company Name

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Title

### **A4.2.3 Certificate of Buy American Compliance – Manufactured Product**

#### **Certificate of Buy American Compliance for Manufactured Products**

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101 by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter “X”.

- ☐ Bidder or offeror hereby certifies that it will comply with 49 USC § 50101 by:
- a) Only installing steel and manufactured products produced in the United States;
  - b) Installing manufactured products for which the Federal Aviation Administration (FAA) has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
  - c) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

1. To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
2. To faithfully comply with providing U.S. domestic product.
3. To furnish U.S. domestic product for any waiver request that the FAA rejects
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

- ☐ The bidder or offeror hereby certifies it cannot comply with the 100 percent Buy American Preferences of 49 USC § 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:

1. To submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that supports the type of waiver being requested.
2. That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may result in rejection of the proposal.
3. To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.
4. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

#### **Required Documentation**

**Type 3 Waiver** – The cost of the item components and subcomponents produced in the United States is more than 60 percent of the cost of all components and subcomponents of the “item”. The required documentation for a Type 3 waiver is:

- a) Listing of all product components and subcomponents that are not comprised of 100 percent U.S. domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety).
- b) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly at place of manufacture.
- c) Percentage of non-domestic component and subcomponent cost as compared to total “item” component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

**Type 4 Waiver** – Total cost of project using U.S. domestic source product exceeds the total project cost using non-domestic product by 25 percent. The required documentation for a Type 4 of waiver is:

- a) Detailed cost information for total project using U.S. domestic product
- b) Detailed cost information for total project using non-domestic product

**False Statements:** Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

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

\_\_\_\_\_  
Title

## **A5 CIVIL RIGHTS - GENERAL**

### **A5.1 SOURCE**

49 USC § 47123

### **A5.2 CONTRACT CLAUSE (Use the Correct Clause for the Situation)**

#### **A5.2.1 Clause that is used for Contracts**

##### **GENERAL CIVIL RIGHTS PROVISIONS**

The Contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision binds the Contractor and subcontractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.



## **A6 CIVIL RIGHTS – TITLE VI ASSURANCE**

### **A6.1 SOURCE**

49 USC § 47123

FAA Order 1400.11

### **A6.2 CONTRACT CLAUSES**

#### **A6.2.1 Title VI Clauses for Compliance with Nondiscrimination Requirements**

The sponsor must include this contract clause in:

- 1) Every contract or agreement (unless the sponsor has determined, and the FAA concurs, that the contract or agreement is not subject to the Nondiscrimination Acts and Authorities); and
- 2) Service contracts with utility companies that are not already subject to nondiscrimination requirements.

#### **Compliance with Nondiscrimination Requirements:**

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “Contractor”), agrees as follows:

1. **Compliance with Regulations:** The Contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. **Solicitations for Subcontracts, including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the contractor’s obligations under this contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.
4. **Information and Reports:** The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the sponsor or the Federal

Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a Contractor's noncompliance with the non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
  - a. Withholding payments to the Contractor under the contract until the Contractor complies; and/or
  - b. Cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

#### **A6.2.2 Title VI Clauses for Deeds Transferring United States Property**

This is a rare occurrence, and it will be the responsibility of the United States government to include the clause in the contract. It will be included as a covenant running with the land, in any deed from the United States effecting or recording a transfer of real property, structures, use, or improvements thereon or interest therein to a sponsor.

#### **CLAUSES FOR DEEDS TRANSFERRING UNITED STATES PROPERTY**

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of the Airport Improvement Program grant assurances.

**NOW, THEREFORE,** the Federal Aviation Administration as authorized by law and upon the condition that the (*Title of Sponsor*) will accept title to the lands and maintain the project constructed thereon in accordance with (*Name of Appropriate Legislative Authority*), for the (**Airport Improvement Program or other program for which land is transferred**), and the policies and procedures prescribed by the Federal Aviation Administration of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 USC § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the (*Title of Sponsor*) all the right, title and interest of the U.S. Department of Transportation/Federal Aviation Administration in and to said lands described in (*Exhibit A attached hereto or other exhibit describing the transferred property*) and made a part hereof.

**(HABENDUM CLAUSE)**

**TO HAVE AND TO HOLD** said lands and interests therein unto (*Title of Sponsor*) and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the (*Title of Sponsor*), its successors and assigns.

The (*Title of Sponsor*), in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]\* (2) that the (*Title of Sponsor*) will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended[, and (3) that in the event of breach of any of the above-mentioned nondiscrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the Federal Aviation Administration and its assigns as such interest existed prior to this instruction].\*

(\*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

### **A6.2.3 Title VI Clauses for Transfer of Real Property Acquired or Improved Under the Activity, Facility, or Program**

This applies to agreements such as leases where a physical portion of the airport is transferred for use—for example a fuel farm, apron space, or a parking facility—and will be included as a covenant running with the land, in any future deeds, leases, licenses, permits, or similar instruments entered into by the sponsor with other parties for all transfers of real property acquired or improved under the Airport Improvement Program.

#### **CLAUSES FOR TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE AIRPORT IMPROVEMENT PROGRAM**

The following clauses will be included in (deeds, licenses, leases, permits, or similar instruments) entered into by the (*Title of Sponsor*) pursuant to the provisions of the Airport Improvement Program grant assurances.

- A. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add “as a covenant running with the land”] that:
  1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a Federal Aviation Administration activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Nondiscrimination Acts and

Regulations listed in the Pertinent List of Nondiscrimination Authorities (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

- B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Nondiscrimination covenants, (*Title of Sponsor*) will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.\*
- C. With respect to a deed, in the event of breach of any of the above Nondiscrimination covenants, the (*Title of Sponsor*) will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the (*Title of Sponsor*) and its assigns.\*

(\*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

**A6.2.4 Title VI Clauses for Construction/Use/Access to  
Real Property Acquired Under the Activity,  
Facility or Program**

This applies to agreements such as leases of concession space in a terminal and any future deeds, leases, licenses, permits, or similar instruments entered into by the sponsor with other parties for the construction or use of, or access to, space on, over, or under real property acquired or improved under the Airport Improvement Program.

**CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED  
UNDER THE ACTIVITY, FACILITY OR PROGRAM**

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by (*Title of Sponsor*) pursuant to the provisions of the Airport Improvement Program grant assurances.

- A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, “as a covenant running with the land”) that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the List of discrimination Acts And Authorities.
- B. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above nondiscrimination covenants, (*Title of Sponsor*) will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.\*
- C. With respect to deeds, in the event of breach of any of the above nondiscrimination covenants, (*Title of Sponsor*) will there upon revert to and vest in and become the absolute property of (*Title of Sponsor*) and its assigns.\*

(\*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

### **A6.2.5 Title VI List of Pertinent Nondiscrimination Acts and Authorities**

Insert this list in every contract or agreement, unless the sponsor has determined and the FAA concurs, that the contract or agreement is not subject to the Nondiscrimination Acts and Authorities. This list can be omitted if the FAA has determined that the contractor or company is already subject to nondiscrimination requirements.

#### **Title VI List of Pertinent Nondiscrimination Acts and Authorities**

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “Contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq.*) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 471, Section 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (PL 100-209) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 USC §§ 12131 – 12189) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration’s Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC 1681 et seq).

## **A7 CLEAN AIR AND WATER POLLUTION CONTROL**

### **A7.1 SOURCE**

2 CFR § 200, Appendix II(G)

### **A7.2 CONTRACT CLAUSE**

#### **CLEAN AIR AND WATER POLLUTION CONTROL**

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 USC § 740-7671q) and the Federal Water Pollution Control Act as amended (33 USC § 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.

Contractor must include this requirement in all subcontracts that exceeds \$150,000.



## **A8 CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS**

### **A8.1 SOURCE**

2 CFR § 200, Appendix II(E)

### **A8.2 CONTRACT CLAUSE**

#### **CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS**

##### **1. Overtime Requirements.**

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

##### **2. Violation; Liability for Unpaid Wages; Liquidated Damages.**

In the event of any violation of the clause set forth in paragraph (1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this clause.

##### **3. Withholding for Unpaid Wages and Liquidated Damages.**

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

##### **4. Subcontractors.**

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

## **A9 COPELAND “ANTI-KICKBACK” ACT**

### **A9.1 SOURCE**

2 CFR § 200, Appendix II(D)

29 CFR Parts 3 and 5

### **A9.2 CONTRACT CLAUSE**

#### **COPELAND “ANTI-KICKBACK” ACT**

Contractor must comply with the requirements of the Copeland “Anti-Kickback” Act (18 USC 874 and 40 USC 3145), as supplemented by Department of Labor regulation 29 CFR part 3. Contractor and subcontractors are prohibited from inducing, by any means, any person employed on the project to give up any part of the compensation to which the employee is entitled. The Contractor and each Subcontractor must submit to the Owner, a weekly statement on the wages paid to each employee performing on covered work during the prior week. Owner must report any violations of the Act to the Federal Aviation Administration.

## **A10 DAVIS-BACON REQUIREMENTS**

### **A10.1 SOURCE**

2 CFR § 200, Appendix II(D)

29 CFR Part 5

### **A10.2 CONTRACT CLAUSE**

#### **DAVIS-BACON REQUIREMENTS**

##### **1. Minimum Wages.**

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided* that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination;
- (2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers, or mechanics to be employed in the classification, or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii) (B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program: *Provided* that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

## 2. Withholding.

The Federal Aviation Administration or the sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the Contractor, Sponsor, Applicant, or Owner, take such action as may be necessary to

cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

### 3. Payrolls and Basic Records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 1(b)(2)(B) of the Davis-Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records that show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and that show the costs anticipated or the actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the payrolls to the applicant, Sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (*e.g.* the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at [www.dol.gov/whd/forms/wh347instr.htm](http://www.dol.gov/whd/forms/wh347instr.htm) or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit them to the applicant, sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, Sponsor, or Owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) The payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i), and that such information is correct and complete;

(2) Each laborer and mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;

(3) Each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The Contractor or subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the sponsor, the Federal Aviation Administration, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, Sponsor, applicant, or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### 4. Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage

determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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

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

5. Compliance with Copeland Act Requirements.

The Contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts.

The Contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR Part 5.5(a)(1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. Contract Termination: Debarment.

A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes Concerning Labor Standards.

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of Eligibility.

(i) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 USC 1001.



## **A11 DEBARMENT AND SUSPENSION**

### **A11.1 SOURCE**

2 CFR part 180 (Subpart C)

2 CFR part 1200

DOT Order 4200.5

### **A11.2 SOLICITATION CLAUSE**

#### **A11.2.1 Bidder or Offeror Certification**

##### **CERTIFICATION OF OFFERER/BIDDER REGARDING DEBARMENT**

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

#### **A11.2.2 Lower Tier Contract Certification**

##### **CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT**

The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a “covered transaction”, must verify each lower tier participant of a “covered transaction” under the project is not presently debarred or otherwise disqualified from participation in this federally assisted project. The successful bidder will accomplish this by:

1. Checking the System for Award Management at website: <http://www.sam.gov>.
2. Collecting a certification statement similar to the Certification of Offerer /Bidder Regarding Debarment, above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract.

If the Federal Aviation Administration later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

## **A12 DISADVANTAGED BUSINESS ENTERPRISE**

### **A12.1 SOURCE**

49 CFR part 26

### **A12.2 REQUIRED PROVISIONS**

#### **A12.2.1 Solicitation Language (Solicitations that include a Project Goal)**

##### Information Submitted as a matter of bidder responsiveness:

The Owner's award of this contract is conditioned upon Bidder or Offeror satisfying the good faith effort requirements of 49 CFR §26.53.

As a condition of bid responsiveness, the Bidder or Offeror must submit the following information with its proposal on the forms provided herein:

- 1) The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the contract;
- 2) A description of the work that each DBE firm will perform;
- 3) The dollar amount of the participation of each DBE firm listed under (1)
- 4) Written statement from Bidder or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet the Owner's project goal; and
- 5) If Bidder or Offeror cannot meet the advertised project DBE goal, evidence of good faith efforts undertaken by the Bidder or Offeror as described in appendix A to 49 CFR part 26.

##### Information submitted as a matter of bidder responsibility:

The Owner's award of this contract is conditioned upon Bidder or Offeror satisfying the good faith effort requirements of 49 CFR §26.53.

The successful Bidder or Offeror must provide written confirmation of participation from each of the DBE firms the Bidder or Offeror lists in its commitment within five days after bid opening.

- 1) The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the contract;
- 2) A description of the work that each DBE firm will perform;
- 3) The dollar amount of the participation of each DBE firm listed under (1)
- 4) Written statement from Bidder or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet the Owner's project goal; and
- 5) If Bidder or Offeror cannot meet the advertised project DBE goal, evidence of good faith efforts undertaken by the Bidder or Offeror as described in appendix A to 49 CFR part 26.

#### **A12.2.2 Solicitation Language (Race/Gender Neutral Means)**

The requirements of 49 CFR part 26 apply to this contract. It is the policy of the [Insert Name of Owner] to practice nondiscrimination based on race, color, sex, or national origin in the award or

performance of this contract. The Owner encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

**A12.2.3 Prime Contracts (Projects Covered by a DBE Program)**

**DISADVANTAGED BUSINESS ENTERPRISES**

**Contract Assurance (§ 26.13) –**

The Contractor 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 of Transportation-assisted contracts. Failure by 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 the Owner deems appropriate, which may include, but is not limited to:

- 1) Withholding monthly progress payments;
- 2) Assessing sanctions;
- 3) Liquidated damages; and/or
- 4) Disqualifying the Contractor from future bidding as non-responsible.

**Prompt Payment (§26.29) –** The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than 30 days from the receipt of each payment the prime contractor receives from Bishop International Airport Authority. The prime contractor agrees further to return retainage payments to each subcontractor within 30 days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Bishop International Airport Authority. This clause applies to both DBE and non-DBE subcontractors.

## **A13 DISTRACTED DRIVING**

### **A13.1 SOURCE**

Executive Order 13513

DOT Order 3902.10

### **A13.2 CONTRACT CLAUSE**

#### **TEXTING WHEN DRIVING**

In accordance with Executive Order 13513, “Federal Leadership on Reducing Text Messaging While Driving”, (10/1/2009) and DOT Order 3902.10, “Text Messaging While Driving”, (12/30/2009), the Federal Aviation Administration encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or subgrant.

In support of this initiative, the Owner encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding \$3,500 that involve driving a motor vehicle in performance of work activities associated with the project.

## **A14 ENERGY CONSERVATION REQUIREMENTS**

### **A14.1 SOURCE**

2 CFR § 200, Appendix II(H)

### **A14.2 CONTRACT CLAUSE**

#### **ENERGY CONSERVATION REQUIREMENTS**

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 USC 6201*et seq*).

## **A15 DRUG FREE WORKPLACE REQUIREMENTS**

### **A15.1 SOURCE**

49 CFR part 32

Drug-Free Workplace Act of 1988 (41 U.S.C. 701 *et seq.*, as amended)

### **A15.2 CONTRACT CLAUSE**

None.

## **A16 EQUAL EMPLOYMENT OPPORTUNITY (EEO)**

### **A16.1 SOURCE**

2 CFR 200, Appendix II(C)

41 CFR § 60-1.4

41 CFR § 60-4.3

Executive Order 11246

### **A16.2 MANDATORY CONTRACT CLAUSE**

#### **A16.2.1 EEO Contract Clause**

##### **EQUAL OPPORTUNITY CLAUSE**

During the performance of this contract, the Contractor agrees as follows:

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identify, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff, or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- (3) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government

MANDATORY CONTRACT PROVISIONS

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contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided, however*, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

### **A16.2.2 EEO Specification**

#### **STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS**

1. As used in these specifications:

- a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
- b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
- c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
- d. "Minority" includes:
  - (1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
  - (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);
  - (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
  - (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.



3. If the Contractor is participating (pursuant to 41 CFR part 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the Contractor during the training period and the Contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

- b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the Contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or female sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions, including specific review of these items, with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other

training by any recruitment source, the Contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally), the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR part 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

## **A17 FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)**

### **A17.1 SOURCE**

29 USC § 201, et seq

### **A17.2 SOLICITATION CLAUSE**

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part-time workers.

The [*Contractor* | *Consultant*] has full responsibility to monitor compliance to the referenced statute or regulation. The [*Contractor* | *Consultant*] must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

## **A18 LOBBYING AND INFLUENCING FEDERAL EMPLOYEES**

### **A18.1 SOURCE**

31 USC § 1352 – Byrd Anti-Lobbying Amendment

2 CFR part 200, Appendix II(J)

49 CFR part 20, Appendix A

### **A18.2 CONTRACT CLAUSE**

#### **CERTIFICATION REGARDING LOBBYING**

The Bidder or Offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

## **A19 PROHIBITION of SEGREGATED FACILITIES**

### **A19.1 SOURCE**

41 CFR § 60

### **A19.2 CONTRACT CLAUSE**

#### **PROHIBITION OF SEGREGATED FACILITIES**

(a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Employment Opportunity clause in this contract.

(b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Employment Opportunity clause of this contract.

## **A20 OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970**

### **A20.1 SOURCE**

29 CFR part 1910

### **A20.2 CONTRACT CLAUSE**

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. The employer must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The employer retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). The employer must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.



## **A21 PROCUREMENT OF RECOVERED MATERIALS**

### **A21.1 SOURCE**

2 CFR § 200.322

40 CFR part 247

Solid Waste Disposal Act

### **A21.2 CONTRACT CLAUSE**

#### **PROCUREMENT OF RECOVERED MATERIALS**

Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- 1) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or
- 2) The contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at [www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products](http://www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products).

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the contractor can demonstrate the item is:

- a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
- b) Fails to meet reasonable contract performance requirements; or
- c) Is only available at an unreasonable price.

## **A22 RIGHT TO INVENTIONS**

### **A22.1 SOURCE**

2 CFR § 200, Appendix II(F)

37 CFR §401

### **A22.2 CONTRACT CLAUSE**

#### **RIGHTS TO INVENTIONS**

Contracts or agreements that include the performance of experimental, developmental, or research work must provide for the rights of the Federal Government and the Owner in any resulting invention as established by 37 CFR part 401, Rights to Inventions Made by Non-profit Organizations and Small Business Firms under Government Grants, Contracts, and Cooperative Agreements. This contract incorporates by reference the patent and inventions rights as specified within 37 CFR §401.14. Contractor must include this requirement in all sub-tier contracts involving experimental, developmental, or research work.

## **A23 SEISMIC SAFETY**

### **A23.1 SOURCE**

49 CFR part 41

### **A23.2 CONTRACT CLAUSE**

#### **A23.2.1 Professional Service Agreements for Design**

##### **SEISMIC SAFETY**

In the performance of design services, the Consultant agrees to furnish a building design and associated construction specification that conform to a building code standard that provides a level of seismic safety substantially equivalent to standards as established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their building code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety. At the conclusion of the design services, the Consultant agrees to furnish the Owner a “certification of compliance” that attests conformance of the building design and the construction specifications with the seismic standards of NEHRP or an equivalent building code.

#### **A23.2.2 Construction Contracts**

##### **SEISMIC SAFETY**

The Contractor agrees to ensure that all work performed under this contract, including work performed by subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety.

## **A24 TAX DELINQUENCY AND FELONY CONVICTIONS**

### **A24.1 SOURCE**

Sections 415 and 416 of Title IV, Division L of the Consolidated Appropriations Act, 2014 (Pub. L. 113-76), and similar provisions in subsequent appropriations acts.

DOT Order 4200.6 - Requirements for Procurement and Non-Procurement Regarding Tax Delinquency and Felony Convictions

### **A24.2 CONTRACT CLAUSE**

#### **CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS**

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

#### **Certifications**

- 1) The applicant represents that it is ( ☐ ) is not ( ☐ ) a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
- 2) The applicant represents that it is ( ☐ ) is not ( ☐ ) is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

#### **Note**

If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore must provide information to the owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

#### **Term Definitions**

**Felony conviction:** Felony conviction means a conviction within the preceding twentyfour (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. § 3559.

**Tax Delinquency:** A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.



## **A25 TERMINATION OF CONTRACT**

### **A25.1 SOURCE**

2 CFR § 200 Appendix II(B)

FAA Advisory Circular 150/5370-10, Section 80-09

### **A25.2 CONTRACT CLAUSE**

#### **A25.2.1 Termination for Convenience**

##### **TERMINATION FOR CONVENIENCE (CONSTRUCTION & EQUIPMENT CONTRACTS)**

The Owner may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to the Owner all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work, and as directed in the written notice.
5. Complete performance of the work not terminated by the notice.
6. Take action as directed by the Owner to protect and preserve property and work related to this contract that Owner will take possession.

Owner agrees to pay Contractor for:

- 1) completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;
- 2) documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;
- 3) reasonable and substantiated claims, costs, and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
- 4) reasonable and substantiated expenses to the Contractor directly attributable to Owner's termination action.

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this contract.

##### **TERMINATION FOR CONVENIENCE (PROFESSIONAL SERVICES)**

The Owner may, by written notice to the Consultant, terminate this Agreement for its convenience and without cause or default on the part of Consultant. Upon receipt of the notice of termination, except as explicitly directed by the Owner, the Contractor must immediately discontinue all services affected.

Upon termination of the Agreement, the Consultant must deliver to the Owner all data, surveys, models, drawings, specifications, reports, maps, photographs, estimates, summaries, and other documents and materials prepared by the Engineer under this contract, whether complete or partially complete.

Owner agrees to make just and equitable compensation to the Consultant for satisfactory work completed up through the date the Consultant receives the termination notice. Compensation will not include anticipated profit on non-performed services.

Owner further agrees to hold Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

## **A25.2.2 Termination for Default**

### **TERMINATION FOR DEFAULT (CONSTRUCTION)**

Section 80-09 of FAA Advisory Circular 150/5370-10 establishes conditions, rights, and remedies associated with Owner termination of this contract due to default of the Contractor.

### **TERMINATION FOR DEFAULT (EQUIPMENT)**

The Owner may, by written notice of default to the Contractor, terminate all or part of this Contract if the Contractor:

1. Fails to commence the Work under the Contract within the time specified in the Notice- to-Proceed;
2. Fails to make adequate progress as to endanger performance of this Contract in accordance with its terms;
3. Fails to make delivery of the equipment within the time specified in the Contract, including any Owner approved extensions;
4. Fails to comply with material provisions of the Contract;
5. Submits certifications made under the Contract and as part of their proposal that include false or fraudulent statements; or
6. Becomes insolvent or declares bankruptcy.

If one or more of the stated events occur, the Owner will give notice in writing to the Contractor and Surety of its intent to terminate the contract for cause. At the Owner's discretion, the notice may allow the Contractor and Surety an opportunity to cure the breach or default.

If within [10] days of the receipt of notice, the Contractor or Surety fails to remedy the breach or default to the satisfaction of the Owner, the Owner has authority to acquire equipment by other procurement action. The Contractor will be liable to the Owner for any excess costs the Owner incurs for acquiring such similar equipment.

Payment for completed equipment delivered to and accepted by the Owner shall be at the Contract price. The Owner may withhold from amounts otherwise due the Contractor for such completed

equipment, such sum as the Owner determines to be necessary to protect the Owner against loss because of Contractor default.

Owner will not terminate the Contractor's right to proceed with the Work under this clause if the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such acceptable causes include: acts of God, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, and severe weather events that substantially exceed normal conditions for the location.

If, after termination of the Contractor's right to proceed, the Owner determines that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the Owner issued the termination for the convenience the Owner.

The rights and remedies of the Owner in this clause are in addition to any other rights and remedies provided by law or under this contract.

### **TERMINATION FOR DEFAULT (PROFESSIONAL SERVICES)**

Either party may terminate this Agreement for cause if the other party fails to fulfill its obligations that are essential to the completion of the work per the terms and conditions of the Agreement. The party initiating the termination action must allow the breaching party an opportunity to dispute or cure the breach.

The terminating party must provide the breaching party [7] days advance written notice of its intent to terminate the Agreement. The notice must specify the nature and extent of the breach, the conditions necessary to cure the breach, and the effective date of the termination action. The rights and remedies in this clause are in addition to any other rights and remedies provided by law or under this agreement.

- a) **Termination by Owner:** The Owner may terminate this Agreement in whole or in part, for the failure of the Consultant to:
1. Perform the services within the time specified in this contract or by Owner approved extension;
  2. Make adequate progress so as to endanger satisfactory performance of the Project; or
  3. Fulfill the obligations of the Agreement that are essential to the completion of the Project.

Upon receipt of the notice of termination, the Consultant must immediately discontinue all services affected unless the notice directs otherwise. Upon termination of the Agreement, the Consultant must deliver to the Owner all data, surveys, models, drawings, specifications, reports, maps, photographs, estimates, summaries, and other documents and materials prepared by the Engineer under this contract, whether complete or partially complete.

Owner agrees to make just and equitable compensation to the Consultant for satisfactory work completed up through the date the Consultant receives the termination notice. Compensation will not include anticipated profit on non-performed services.

Owner further agrees to hold Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

If, after finalization of the termination action, the Owner determines the Consultant was not in default of the Agreement, the rights and obligations of the parties shall be the same as if the Owner issued the termination for the convenience of the Owner.



b) **Termination by Consultant:** The Consultant may terminate this Agreement in whole or in part, if the Owner:

1. Defaults on its obligations under this Agreement;
2. Fails to make payment to the Consultant in accordance with the terms of this Agreement;
3. Suspends the Project for more than [180] days due to reasons beyond the control of the Consultant.

Upon receipt of a notice of termination from the Consultant, Owner agrees to cooperate with Consultant for the purpose of terminating the agreement or portion thereof, by mutual consent. If Owner and Consultant cannot reach mutual agreement on the termination settlement, the Consultant may, without prejudice to any rights and remedies it may have, proceed with terminating all or parts of this Agreement based upon the Owner's breach of the contract.

In the event of termination due to Owner breach, the Engineer is entitled to invoice Owner and to receive full payment for all services performed or furnished in accordance with this Agreement and all justified reimbursable expenses incurred by the Consultant through the effective date of termination action. Owner agrees to hold Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

## **A26 TRADE RESTRICTION CERTIFICATION**

### **A26.1 SOURCE**

49 USC § 50104

49 CFR part 30

### **A26.2 SOLICITATION CLAUSE**

#### **TRADE RESTRICTION CERTIFICATION**

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror –

- 1) is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (USTR);
- 2) has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the USTR; and
- 3) has not entered into any subcontract for any product to be used on the Federal project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18 USC Section 1001.

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The Contractor must require subcontractors provide immediate written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to an Offeror or subcontractor:

- 1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR or
- 2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such USTR list or
- 3) who incorporates in the public works project any product of a foreign country on such USTR list.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

The Offeror agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in all lower tier subcontracts. The Contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by USTR, unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration (FAA) may direct through the Owner cancellation of the contract or subcontract for default at no cost to the Owner or the FAA.

## **A27 VETERAN'S PREFERENCE**

### **A27.1 SOURCE**

49 USC § 47112(c)

### **A27.2 CONTRACT CLAUSE**

#### **VETERAN'S PREFERENCE**

In the employment of labor (excluding executive, administrative, and supervisory positions), the Contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 USC 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

**END OF SECTION 00900**

**BISHOP INTERNATIONAL AIRPORT  
TERMINAL ROOF REPLACEMENT PROJECT  
FLINT, MICHIGAN**

**SECTION 00905 - WAGE RATES**

The applicable wage rates, as required by Article 13.8 of the General and Supplementary Conditions, are attached at the end of this section.

"General Decision Number: MI20220083 08/05/2022

Superseded General Decision Number: MI20210083

State: Michigan

Construction Type: Building

County: Genesee County in Michigan.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

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

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none"><li>. Executive Order 14026 generally applies to the contract.</li><li>. The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.</li></ul>
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none"><li>. Executive Order 13658 generally applies to the contract.</li><li>. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.</li></ul>

The applicable Executive Order minimum wage rate will be

adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number	Publication Date
0	01/07/2022
1	02/18/2022
2	02/25/2022
3	04/01/2022
4	05/20/2022
5	06/03/2022
6	06/24/2022
7	07/01/2022
8	07/15/2022
9	07/29/2022
10	08/05/2022

\* ASBE0047-002 07/01/2022

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 34.62	18.58

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BOIL0169-001 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 35.95	34.52

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BRMI0009-014 08/01/2020

	Rates	Fringes
BRICKLAYER.....	\$ 33.23	23.08
TILE FINISHER.....	\$ 29.93	18.02
TILE SETTER.....	\$ 29.93	18.02

#### FOOTNOTE:

Paid Holiday: Fourth of July, if the worker was employed by the contractor in any period of seven working days before said holiday within the current calendar year.

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CARP0706-001 06/01/2021

	Rates	Fringes
CARPENTER, Includes		
Acoustical Ceiling		
Installation, Drywall		
Hanging, Form Work, and Metal		
Stud Installation.....	\$ 29.48	22.00

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ELEC0948-001 05/30/2022

	Rates	Fringes
ELECTRICIAN		
Excludes Low Voltage Wiring.	\$ 39.17	23.51
Low Voltage Wiring.....	\$ 40.71	9.36+36.76%

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ENGI0324-011 06/01/2022

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 44.13	24.85
GROUP 2.....	\$ 40.83	24.85
GROUP 3.....	\$ 38.18	24.85
GROUP 4.....	\$ 36.47	24.85
GROUP 5.....	\$ 36.47	24.85
GROUP 6.....	\$ 30.61	24.85
GROUP 7.....	\$ 28.13	24.85

FOOTNOTES:

Crane operator with main boom and jib 300' or longer: \$1.50 per hour above the group 1 rate. Crane operator with main boom and jib 400' or longer: \$3.00 per hour above the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane operator with main boom and jib 400', 300', or 220' or longer.

GROUP 2: Crane operator with main boom and jib 140' or longer, tower crane, gantry crane, whirley derrick



GROUP 3: Backhoe/Excavator/Trackhoe; Bulldozer; Concrete Pump; Crane; Grader/Blade; Highlift; Hoist; Loader; Roller; Scraper; Stiff Leg Derrick; Tractor; Trencher

GROUP 4: Bobcat/Skid Loader; Broom/Sweeper; Fork Truck (over 20' lift)

GROUP 5: Boom Truck (non-swinging)

GROUP 6: Fork Truck (20' lift and under for masonry work)

GROUP 7: Oiler

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IRON0025-019 06/01/2019

	Rates	Fringes
IRONWORKER		
REINFORCING.....	\$ 30.98	27.99
STRUCTURAL.....	\$ 36.77	29.03

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LAB00334-005 06/01/2022

	Rates	Fringes
LABORER: Landscape & Irrigation		
GROUP 1.....	\$ 23.82	7.60
GROUP 2.....	\$ 21.60	7.60

#### CLASSIFICATIONS

GROUP 1: Landscape specialist, including air, gas and diesel equipment operator, lawn sprinkler installer, skidsteer (or equivalent)

GROUP 2: Landscape laborer: small power tool operator, material mover, truck driver and lawn sprinkler installer tender

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LAB01075-002 06/01/2022

	Rates	Fringes
LABORER		
Common or General; Grade Checker; Mason Tender -		

Brick/Cement/Concrete, Pipelayer; Sandblaster.....	\$ 26.41	14.05
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PAIN1052-001 05/01/2022

	Rates	Fringes
PAINTER		
Brush & Roler.....	\$ 27.87	14.15
Spray.....	\$ 29.22	14.15

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PAIN1052-004 06/01/2020

	Rates	Fringes
DRYWALL FINISHER/TAPER		
Drywall sanding.....	\$ 27.15	15.00
Hand work.....	\$ 27.15	15.00
Machine work.....	\$ 27.15	15.00

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PLAS0016-005 04/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 25.58	12.88

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PLUM0370-002 06/01/2022

	Rates	Fringes
PIPEFITTER (Includes HVAC Pipe Installation; Excludes HVAC System Installation).....	\$ 42.21	22.35
PLUMBER, Excludes HVAC Pipe Installation.....	\$ 42.21	22.35

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ROOF0149-005 06/01/2020

	Rates	Fringes
ROOFER.....	\$ 29.58	23.25

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SFMI0669-001 04/01/2022

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers).....	\$ 38.69	24.66

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SHEE0007-008 05/01/2018

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct and Unit Installation.....	\$ 30.64	22.76

\* SUMI2011-008 02/01/2011

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 18.48	7.93
TRUCK DRIVER: Tractor Haul Truck.....	\$ 13.57 **	1.18

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

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\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$15.00) or 13658 (\$11.25). Please see the Note at the top of the wage determination for more information.

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

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

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

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

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

#### Survey Rate Identifiers

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

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

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

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#### WAGE DETERMINATION APPEALS PROCESS

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

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor

200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

**BISHOP INTERNATIONAL AIRPORT  
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**SECTION 01740 - WARRANTIES  
AND BONDS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products and special warranties.
  - 1. Refer to the GENERAL CONDITIONS for terms of the Contractor's special warranty of workmanship and materials.
  - 2. Specific requirements for warranties for the work and products and installations that are specified to be warranted, are included in the individual sections of Divisions 2 through 17.
  - 3. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers, and Subcontractors required to countersign special warranties with the Contractor.

**1.2 WARRANTY REQUIREMENTS**

- A. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
- B. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the Owner has benefited from use of the work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on

time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- E. The Owner reserves the right to refuse to accept work for the project where a special warranty, certification, or similar commitment is required on such work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.

### 1.3 SUBMITTALS

- A. Submit written warranties to the Architect-Engineer prior to the date certified for substantial completion. If the Architect-Engineer's Certificate of Substantial Completion designates a commencement date for warranties other than the date of substantial completion for the work, or a designated portion of the work, submit written warranties upon request of the Architect-Engineer.
1. When a designated portion of the work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect-Engineer within 15 days of completion of that designated portion of the work.
- B. When a special warranty is required to be executed by the Contractor, or the Contractor and a Subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect-Engineer for approval prior to final execution.
1. Refer to individual sections of Divisions 2 through 17 for specific content requirements, and particular requirements for submittal of special warranties.
- C. Form of Submittal: At final completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, Subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the project manual.
- D. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring white vinyl covered loose-leaf binders with clear plastic window on front and spine, thickness as required to accommodate contents, and sized to receive 8-1/2 inch by 11 inch paper.
1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the 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 the installer.



2. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the project title or name, and the name of the Contractor.
3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01740

**BISHOP INTERNATIONAL AIRPORT  
TERMINAL ROOF REPLACEMENT PROJECT  
FLINT, MICHIGAN**

**SECTION 06 10 00  
ROUGH CARPENTRY**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes the following:
  - 1. Wood blocking, cants, and nailers.

**1.2 DEFINITIONS**

- A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- B. Lumber grading agencies, and the abbreviations used to reference them, include the following:
  - 1. NLGA: National Lumber Grades Authority.
  - 2. SPIB: The Southern Pine Inspection Bureau.
  - 3. WCLIB: West Coast Lumber Inspection Bureau.
  - 4. WWPA: Western Wood Products Association.

**1.3 SUBMITTALS**

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for the following products:
  - 1. Insulating sheathing.
  - 2. Construction adhesives.
  - 3. 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.
  - 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.
  - 5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- C. 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.

**1.4 DELIVERY, STORAGE, AND HANDLING**

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

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
  - 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
  - 3. Provide dressed lumber, S4S, unless otherwise indicated.
- B. Engineered Wood Products: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
  - 1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by manufacturer, that 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.

### 2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWPAC2 (lumber) and AWPAC9 (plywood).
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction.
  - 2. Do not use chemicals containing chromium or arsenic.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent (15 percent plywood) and a minimum retention of 0.25lb/cu. ft. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat 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, and waterproofing.
  - 2. Wood sills, sleepers, blocking, backing, furring, and similar concealed members in contact with masonry or concrete.
  - 3. Wood framing members less than 18 inches above grade.
  - 4. Wood floor plates installed over concrete slabs directly in contact with earth.
- E. Pressure treat wood members in contact with ground or freshwater with waterborne preservatives to a minimum retention of 0.40 lb/cu. ft.

- F. Complete fabrication of treated items before treatment, where possible. If cut after treatment, apply field treatment complying with AWWA M4 to cut surfaces. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.
- G. Do not use oil borne pentachlorophenol for surfaces that are to be painted and surfaces in contact with roofing.

## 2.3 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Wood-Preservative-Treated Materials:
    - a. Baxter: J.H. Baxter Co.
    - b. Chemical Specialties, Inc.
    - c. Continental Wood Preservers, Inc.
    - d. Hickson Corp.
    - e. Hoover Treated Wood Products, Inc.
    - f. Osmose Wood Preserving Inc.

## 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.
- B. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
  - 1. Mixed 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; NLGA, WCLIB, or WWPA.
- C. 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.

## 2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
  - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Lag Bolts: ASME B18.2.1.

- F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
  - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, backing, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Do not splice structural members between supports, unless otherwise indicated.
- D. 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.
- E. Provide fire blocking in furred 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.
- F. Sort and select lumber so that natural characteristics will 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.
- G. Comply with AWWA 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.
- H. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. NES NER-272 for power-driven fasteners.
  - 2. "Recommended Nailing Schedule" of referenced framing standard and with AFPA's "National Design Specifications for Wood Construction." Comply with requirements of applicable codes and of authorities having jurisdiction.

- I. Use hot-dip galvanized nails, unless otherwise indicated. Use finishing nails for finish work. 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.
- J. Countersink nail heads on exposed carpentry work and fill holes.

### 3.2 WOOD GROUNDS, BLOCKING, BACKING, 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. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.

### 3.3 PROTECTION

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

END OF SECTION 06 10 00

**BISHOP INTERNATIONAL AIRPORT  
TERMINAL ROOF REPLACEMENT PROJECT  
FLINT, MICHIGAN**

**SECTION 07 24 10  
EXTERIOR INSULATION AND  
FINISH SYSTEMS - CLASS PB**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. Repair flashing and waterproofing deficiencies at EIF system terminations.
- B. Repair distress and construction deficiencies of exterior insulation and finish system (EIFS) cladding.
- C. Related sections include the following:
  - 1. Division 7, Section 07 92 00 - SEALANTS AND CAULKING for sealing joints in system with elastomeric joint sealants.
  - 2. Division 6, Section 06 10 00 - ROUGH CARPENTRY.
  - 3. Division 9, Section 09 25 50 – GYPSUM BOARD ASSEMBLIES for exterior gypsum board sheathing.

**1.3 DEFINITIONS**

- A. Class PB Exterior Insulation and Finish System (EIFS) is defined by ASTM C1397 as a "nonload bearing, exterior wall cladding system that consists of an insulation board attached either adhesively, mechanically, or both to the substrate; an integrally reinforced base coat; and a texture protective finish coat."
- B. Systems refer to Class PB EIFS.
- C. System manufacturer refers to EIFS manufacturer.

**1.4 PERFORMANCE REQUIREMENTS**

- A. General: Provide systems that comply with the following performance requirements:
  - 1. Bond Integrity: Free from bond failure within system components or between system and supporting wall construction, resulting from exposure to fire, wind loads, weather, or other in-service conditions.

2.     Weathertightness: Resistant to water penetration from exterior into system and assemblies behind it or through them into interior of building that results in deterioration of thermal-insulating effectiveness or other degradation of system and assemblies behind it, including substrates, supporting wall construction, and interior finish.
- B.     Physical Properties of Class PB System: Provide EIFS whose physical properties and structural performance comply with the following when tested per methods referenced:
1.     Abrasion Resistance: Sample consisting of 1-inch-thick EIFS mounted on 1/2-inch-thick gypsum board; cured for a minimum of 28 days; and showing no cracking, checking, or loss of film integrity after exposure to 528 quarts of sand when tested per ASTM D968, Method A.
  2.     Accelerated Weathering Characteristics: Sample of size suitable for test equipment and consisting of 1-inch-thick EIFS mounted on 1/2-inch-thick gypsum board; cured for 28 days; and showing no cracking, checking, crazing, erosion, blistering, peeling, or delamination after testing for 2000 hours when viewed under five times magnification per ASTM G23, Method 1.
  3.     Absorption-Freeze Resistance: No visible deleterious effects and negligible weight loss after 60 cycles per EIMA 101.01.
  4.     Mildew Resistance: Sample consisting of finish coat applied to 2-by-2-inch clean glass substrate; cured for 28 days; and showing no growth when tested per ASTM D3273.
  5.     Salt-Spray Resistance: Sample consisting of 1-inch-thick EIFS mounted on 1/2-inch-thick gypsum board; cured for 28 days; and showing no cracking, checking, crazing, erosion, blistering, peeling, or delamination after testing for 300 hours per ASTM B117.
  6.     Tensile Adhesion: No failure in the adhesive, base coat, or finish coat. Minimum 5-psi tensile strength before and after freeze-thaw and accelerated weathering tests per EIMA 101.03.
  7.     Water Penetration: Sample consisting of 1-inch-thick EIFS mounted on 1/2-inch-thick gypsum board; cured for 28 days; and showing no water penetration into the plane of the base coat to expanded polystyrene board interface of the test specimen after 15 minutes at 6.24 lbf/sq. ft. of air pressure difference or 20 percent of positive design wind pressure, whichever is greater, across the specimen during a test period when tested per EIMA 101.02.
  8.     Water Resistance: Sample consisting of 1-inch-thick EIFS mounted on 1/2-inch-thick gypsum board; cured for 28 days; and showing no cracking, checking, crazing, erosion, blistering, peeling, or delamination after testing for 14 days per ASTM D2247.



9. Impact Resistance: Sample consisting of 1-inch-thick EIFS when constructed, conditioned, and tested per EIMA 101.86; and meeting or exceeding the following impact classification and range:
  - a. Standard Impact Resistance: 25-49 inch-lb.
  - b. High Impact Resistance: 90-150 inch-lb.
10. Positive and Negative Wind-Load Performance: Sample assembly, 48 by 48 inches in size, consisting of studs, sheathing, and 1-inch-thick EIFS; and showing capability to withstand wind loads indicated when tested per ASTM E330.

## 1.5 SUBMITTALS

- A. Product Data: For each component of EIFS required for repair and remediation.
- B. Shop Drawings: Provide flashing installation, repair and/or replacement details for applicable conditions and indicate locations of each repair on project drawings. Flashing remediation shall be based on manufacturers standard flashing requirements recommendations.
- C. Samples for Verification: 24-inch-square panels for each finish, color, texture, and pattern specified. Prepare samples using same tools and techniques intended for actual work.
  1. Incorporate within each sample a typical control joint filled with sealant of color indicated or selected.
- D. Installer Certificates: Signed by system manufacturer certifying that installers comply with specified requirements.
- E. Material Certificates: Signed by manufacturers or a third-party agency approved by system manufacturer certifying that each of the following items complies with requirements:
  1. Insulation.
  2. Joint sealants.
- F. Compatibility and Adhesion Test Reports: From sealant manufacturer indicating that materials forming joint substrates and joint sealant backings have been tested for compatibility and adhesion with joint sealants. Include joint sealant manufacturer's written interpretation of test results relative to sealant performance and recommendations for primers and substrate preparation needed to obtain adhesion.
- G. Product Test Reports: Indicate compliance of proposed EIFS with physical property requirements specified in "Performance Requirements" Article based on

comprehensive testing of current products by a qualified testing and inspecting agency.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who is certified in writing by system manufacturer as qualified to install manufacturer's system.
- B. Manufacturer Qualifications: Engage a firm experienced in manufacturing systems similar to those indicated for this Project and with a record of successful in-service performance.
- C. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E548.
- D. Source Limitations: Obtain materials for system from one source and by a single manufacturer or by manufacturers approved by EIFS manufacturer as compatible with other system components.
- E. Fire-Test-Response Characteristics: Provide system assemblies and components with the following fire-test-response characteristics as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting agency.
  - 1. Flame Spread of Insulation Board and Finish Coats: 25 or less when tested individually per ASTM E84.
  - 2. Smoke Developed of Insulation Board and Finish Coats: 450 or less when tested individually per ASTM E84.
  - 3. Radiant Heat Exposure, Unrestricted Installation: Tolerable level of incident radiant heat energy of at least 12.5 kW/sq. m when tested according to the BOCA National Building Code.
  - 4. Fire-Resistance Characteristics: Where indicated, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E119 by testing and inspecting agency acceptable to authorities having jurisdiction.
- F. Mockups: Before installing/repairing system, construct mockups for each form of construction repair and finish required to verify selections made under Sample submittals and to demonstrate aesthetic effects and qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for completed Work:
  - 1. Locate mockups in the location and of the size indicated or, if not indicated, as directed by Architect.

2. Notify Architect seven days in advance of the dates and times when mockups will be constructed.
  3. Demonstrate the proposed range of aesthetic effects and workmanship.
  4. Obtain Architect's approval of mockups before starting fabrication of work.
  5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
    - a. Protect mockups from weather and from construction activities. Brace mockups to resist design wind loads and provide waterproof coverings for construction materials not intended to be permanently exposed to the weather.
    - b. Approved mockups in an undisturbed condition at the time of Substantial Completion may become part of the completed Work.
- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1, Section 01200 - PROJECT MEETINGS.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original, unopened packages with manufacturer's labels intact and clearly identifying products.
- B. Store materials inside and under cover; keep them dry and protected from the weather, direct sunlight, surface contamination, aging, corrosion, damaging temperatures, construction traffic, and other causes.
  1. Stack insulation board flat and off the ground.
  2. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

#### 1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install system when ambient outdoor air and substrate temperatures are 40 deg F and falling unless temporary protection and heat are provided to maintain ambient temperatures above 40 deg F during installation of wet materials and until they have dried thoroughly and become weather resistant, but for at least 24 hours after installation.

#### 1.9 COORDINATION AND SCHEDULING

- A. Coordinate installation of EIFS with related Work specified in other sections to ensure that wall assemblies, including sheathing, flashing, trim, joint sealers, windows, and doors, are protected against damage from the effects of weather, age, corrosion, moisture, and other causes. Do not allow water to penetrate behind EIFS.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Basis of Design: The named manufacturer and associated product are the basis of design. The basis of design is intended to establish a level of quality, function and appearance for the work and is not intended to limit competition. Other manufacturer whose products may be considered for the work, subject to compliance with requirements, are also listed. Any modifications to the project resulting from the use of products other than the basis of design shall be done at no cost to the Owner.

1. Dryvit System, Inc. "Outsulation Plus."
2. Sto Corp.: Sto Finish Systems Division.
3. Finestone; BASF Corp.

### 2.2 MATERIALS (As required for repair work being performed on existing system)

- A. Compatibility: Provide substrates, adhesive, board insulation, reinforcing meshes, base and finish-coat materials, sealants, and accessories that are compatible with one another (and the existing system) and approved for use by system manufacturer for Project.
- B. Colors, Textures, and Patterns of Finish Coat: Match existing terminal finishes.
- C. Exterior Gypsum Wall Sheathing Board: ASTM C79, with manufacturer's standard edges.
1. Core: Water-resistant, fire-resistant gypsum.
- D. Primer-Sealer: System manufacturer's standard substrate conditioner designed to seal substrates from moisture penetration and to improve the bond between substrate of type indicated and adhesive used for application of insulation.
- E. Adhesive for Application of Insulation: System manufacturer's standard formulation designed for indicated use, compatible with substrate, and complying with the following requirements:
1. Factory-blended dry formulation of portland cement, dry polymer admixture, and fillers specified for base coat.
  2. Factory-mixed formulation designed for adhesive attachment of insulation to substrates of type indicated, as recommended by system manufacturer.

3. Any formulation indicated above, as recommended by system manufacturer.
- F. Waterproof Adhesive for Application of Insulation: System manufacturer's waterproof formulation designed for indicated use, compatible with substrate, and complying with the following requirements:
1. Job-mixed formulation of portland cement complying with ASTM C150, Type I, and polymer-based adhesive specified for base coat.
- G. Molded-Polystyrene Board Insulation: Rigid, cellular thermal insulation formed by expansion of polystyrene resin beads or granules in a closed mold. Comply with system manufacturer's requirements, ASTM C578 for Type I, and "EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board" for more stringent requirements for material performance and qualities of insulation, including dimensions and permissible variations, and the following:
1. Before cutting and shipping, age insulation in block form by air drying for not less than six weeks or by another method approved by EIMA that produces equivalent results.
  2. Provide insulation in boards not more than 24 by 48 inches and in thickness indicated but not more than 4 inches or less than that allowed by ASTM PS49.
- H. Reinforcing Mesh: Balanced, alkali-resistant, open-weave glass-fiber mesh treated for compatibility with other system materials, made from continuous multiend strands with retained mesh tensile strength of not less than 120 lbf/in. per EIMA 105.01, complying with ASTM D578 and the following requirements for minimum weight:
1. Standard Reinforcing Mesh: Not less than 4.0 oz./sq. yd.
  2. High-Impact Reinforcing Mesh: Not less than 15 oz./sq. yd.
  3. Strip Reinforcing Mesh: Not less than 3.75 oz./sq. yd.
  4. Detail Reinforcing Mesh: Not less than 4 oz./sq. yd.
  5. Corner Reinforcing Mesh: Not less than 7.2 oz./sq. yd.
- I. Waterproof Base-Coat Materials: System manufacturer's standard waterproof mixture complying with the following requirements for material composition and method of combining materials:
1. Job-mixed formulation of portland cement complying with ASTM C150, Type I, white or natural color; and manufacturer's standard polymer-emulsion adhesive designed for use indicated.
- J. Primer: System manufacturer's standard factory-mixed elastomeric-polymer primer for preparing base-coat surface for application of finish coat.

- K. Finish-Coat Materials: System manufacturer's standard mixture complying with the following requirements for material composition and method of combining materials:
1. Factory-mixed formulation of polymer-emulsion binder, colorfast mineral pigments, sound stone particles, and fillers.
  2. Sealer: Manufacturer's waterproof, clear acrylic-based sealer for protecting finish coat.
- L. Water: Potable.
- M. Mechanical Fasteners: EIFS manufacturer's standard corrosion-resistant fasteners consisting of thermal cap, standard washer and shaft attachments, and fastener indicated below; selected for properties of pullout, tensile, and shear strength required to resist design loads of application indicated; capable of pulling fastener head below surface of insulation board; and of the following description:
1. For attachment to steel studs from 0.033 to 0.112 inch in thickness, provide steel drill screws complying with ASTM C 954.
  2. For attachment to light-gage steel framing members not less than 0.0179 inch in thickness, provide steel drill screws complying with ASTM C 1002.
  3. For attachment to masonry and concrete substrates, provide sheathing dowel in form of a plastic wing-tipped fastener with thermal cap, sized to fit insulation thickness indicated and to penetrate substrate to depth required to secure anchorage.
  4. For attachment, provide manufacturer's standard fasteners suitable for substrate.
- N. Trim Accessories: Type as designated or required to suit conditions indicated and to comply with system manufacturer's written requirements, manufactured from vinyl plastic and complying with ASTM C1063.
1. Control Joints: Prefabricated, one-piece type manufactured with expanded metal flanges, formed to provide double keying action with protective coating, extending only to face of insulation; with removable tape on plaster face and 1/4 inch joint sight line and shallow bellows configuration where bellow extends to face of insulation only.
  2. Corner Bead: Prefabricated small-nosed corner bead with expanded metal flanges extending minimum of 2-7/8 inches from corner.
  3. Casing Bead: Prefabricated one-piece type for attachment behind insulation, of depth required to suit thickness of coating and insulation, with face leg perforated for bonding to coating.

4. Drip Screed: Prefabricated one-piece type for attachment behind insulation, of depth required to suit thickness of coating and insulation, with face leg perforated for bonding to coating and extended to form a drip.

## 2.3 ELASTOMERIC SEALANTS

- A. Elastomeric Sealant Products: Dow 790 Silicone or approved equal.
- B. Sealant Color: Match finish-coat color of system.

## 2.4 MIXING

- A. General: Comply with system manufacturer's requirements for combining and mixing materials. Do not introduce admixtures, water, or other materials except as recommended by system manufacturer. Mix materials in clean containers. Use materials within time period specified by system manufacturer or discard.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of system. Proceed with installation of system only after unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

- A. Protect contiguous work from moisture deterioration and soiling caused by application of systems. Provide temporary covering and other protection needed to prevent spattering of exterior finish coats on other work.
- B. Protect system, substrates, and wall construction behind them from inclement weather during installation. Prevent infiltration of moisture behind system and deterioration of substrates.
- C. Prepare and clean substrates to comply with system manufacturer's written requirements to obtain optimum bond between substrate and adhesive for insulation.
  1. Apply primer-sealer over substrates where required by system manufacturer for improving adhesion or for protecting substrates from degradation.

## 3.3 INSTALLATION

- A. Comply with ASTM C1397 and system manufacturer's written instructions for installation of system as applicable to each type of substrate indicated.

- B. Apply trim accessories at perimeter of system, at expansion joints, and elsewhere, as indicated. Use drip screed at bottom edge of system, unless otherwise indicated. Use casing beads at other locations.
- C. Adhesively and mechanically attach insulation to comply with ASTM C1397, system manufacturer's written requirements, and the following:
  - 1. Apply adhesive to insulation by notched-trowel method in a manner that results in adhesive's coating the entire surface of gypsum sheathing once insulation is adhered to sheathing, unless system manufacturer's written instructions specify using primer-sealer with ribbon-and-dab method. Apply adhesive to a height of not less than 1/4 inch for factory mixed and not less than 3/8 inch for field mixed, measured from the surface of the insulation board before placement.
  - 2. Press and slide insulation board into place. Apply pressure over the entire surface of the insulation board to accomplish uniform contact, high initial grab, and an overall level surface.
  - 3. Allow adhered insulation to remain undisturbed for period recommended by system manufacturer, but not less than 24 hours, before installing mechanical fasteners, beginning rasping and sanding insulation, or applying base coat and reinforcing mesh.
  - 4. Mechanically attach insulation to substrate by method complying with EIFS manufacturer's written requirements. Install top surface of fastener heads flush with plane of insulation. Install fasteners into or through substrates with the following minimum penetration:
    - a. Steel Framing: 5/16 inch.
    - b. Concrete and Masonry: 1 inch.
  - 5. Apply insulation boards over dry substrates in courses with long edges oriented horizontally. Begin first course from drip screed and work upward. Work from perimeter casing beads toward interior of panels if possible.
  - 6. Stagger vertical joints in successive courses to produce running bond pattern. Locate joints so no piece of insulation is less than 12 inches wide or 6 inches high. Offset joints not less than 6 inches from corners of window and door openings.
    - a. Offset joints of insulation not less than 6 inches from horizontal and 4 inches from vertical joints in sheathing.
    - b. Offset joints of insulation not less than 4 inches from aesthetic reveals.
  - 7. Interlock ends at internal and external corners.



8. Abut boards tightly at joints within and between each course to produce flush, continuously even surfaces without gaps or raised edges between insulation boards. If gaps greater than 1/16 inch occur, fill with insulation cut to fit gaps exactly; insert insulation without using adhesive or other material.
9. Cut insulation to fit openings, corners, and projections precisely and to produce edges and shapes complying with details indicated.
10. Rasp or sand flush entire surface of insulation to remove irregularities projecting more than 1/32 inch from surface of insulation and to remove yellowed areas due to sun exposure; do not create depressions deeper than 1/16 inch.
11. Cut aesthetic reveals in outside face of insulation with high-speed router and bit configured to produce grooves, rabbets, and other features that comply with profiles and locations indicated. Do not reduce insulation thickness at features to less than 3/4 inch.
12. Install foam shapes attached to supporting substrate, where indicated.
13. Interrupt insulation for expansion joints where indicated.
14. Form joints for sealant application with back-to-back casing beads for joints within system and with perimeter casing beads at dissimilar adjoining surfaces. Make gaps between casing beads and between perimeter casing beads and adjoining surfaces of width indicated.
15. Treat exposed edges of insulation board as follows:
  - a. Wrap edges after installing insulation board and before applying field-applied reinforcing mesh.
  - b. Wrap mesh of width required to extend not less than 2-1/2 inches onto substrate behind insulation board, cover insulation board edge, and extend not less than 2-1/2 inches onto insulation board face.
  - c. Wrap edges of insulation board, except those forming substrates of sealant joints, by encapsulating with base coat, reinforcing mesh, and finish coat.
  - d. Wrap edges of insulation board forming substrates of sealant joints within system or between system and other work by encapsulating with base coat and reinforcing mesh.
16. Treat edges of insulation board at trim accessories by extending base coat, reinforcing mesh, and finish coat over face leg of accessories.
17. Coordinate flashing installation with installation of insulation to produce a wall system that does not allow water to penetrate behind protective coating.

- D. Install trim accessories at locations indicated according to system manufacturer's written instructions.
- E. Install expansion joints at locations indicated, where required by system manufacturer, and as follows:
  - 1. Where expansion joints are indicated in substrates behind EIFS.
  - 2. Where EIFS adjoins dissimilar substrates, materials, and construction.
  - 3. Where wall height changes.
- F. Apply 'backstop' as recommended by manufacturer.
- G. Apply base coat to exposed surfaces of insulation in minimum thickness recommended in writing by system manufacturer, but not less than 1/16-inch dry-coat thickness.
- H. Embed reinforcing mesh of type indicated below in wet base coat to produce wrinkle-free installation with mesh continuous at corners and overlapped not less than 2-1/2 inches or otherwise treated at joints to comply with ASTM PS49 and system manufacturer's written requirements. Do not lap reinforcing mesh within 8 inches of corners. Completely embed mesh, applying additional base-coat material if necessary, so reinforcing-mesh color and pattern are not visible.
  - 1. Standard reinforcing mesh, unless otherwise indicated.
  - 2. High-Impact reinforcing mesh where indicated on drawings.
- I. Additional Reinforcing Mesh: Apply strip reinforcing mesh around openings extending 4 inches beyond perimeter. Apply additional 9-by-12-inch strip reinforcing mesh diagonally at corners of openings (re-entrant corners). Apply 8-inch-wide strip reinforcing mesh at both inside and outside corners, unless base layer of mesh is lapped not less than 4 inches on each side of corners.
  - 1. At aesthetic reveals, apply strip reinforcing mesh not less than 8 inches wide.
  - 2. Embed strip reinforcing mesh in base coat before applying first layer of reinforcing mesh.
- J. Shapes: Fully embed reinforcing mesh in base coat.
- K. Apply primer over dry base coat according to system manufacturer's written instruction.
- L. Apply finish coat over dry primer, maintaining a wet edge at all times for uniform appearance, in thickness required by system manufacturer to produce a uniform finish of color and texture matching approved sample.

1. Apply sealer coat over dry finish coat, in number of coats and thickness required by system manufacturer.

### 3.4 INSTALLATION OF JOINT SEALANTS

- A. Prepare joints and apply sealants, of type and at locations indicated, to comply with applicable requirements in Division 7, Section 07 92 00 - JOINT SEALANTS and in "EIMA Guide for Use of Sealants with Exterior Insulation and Finish Systems, Class PB."
  1. Clean surfaces to receive sealants to comply with indicated requirements and system manufacturer's written instructions.
  2. Apply primer recommended in writing by sealant manufacturer for surfaces to be sealed.
  3. Install sealant backing to control depth and configuration of sealant joint and to prevent sealant from adhering to back of joint.
  4. Apply masking tape to protect areas adjacent to sealant joints. Remove tape immediately after tooling joints, without disturbing joint seal.
  5. Recess sealant sufficiently from surface of system so an additional sealant application, including backing rod, can be installed without protruding beyond system surface.
  6. Apply joint sealants after base coat has cured but before applying finish coat.

### 3.5 CLEANING AND PROTECTING

- A. Remove temporary covering and protection of other work. Promptly remove coating materials from window and door frames and other surfaces outside areas indicated to receive system coatings.
- B. Provide final protection and maintain conditions, in a manner acceptable to Installer and system manufacturer, that ensure system is without damage or deterioration at the time of Substantial Completion.

END OF SECTION 07241

**BISHOP INTERNATIONAL AIRPORT  
TERMINAL ROOF REPLACEMENT PROJECT  
FLINT, MICHIGAN**

**SECTION 07 53 23  
EPDM ROOFING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

A. Section Includes:

- 1. Adhered EPDM membrane roofing system.
- 2. Roof insulation.

B. Related Sections:

- 1. Division 6 Section "Rough Carpentry" for wood nailers, curbs, and blocking.
- 2. Division 7 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counterflashings.
- 3. Division 7 Section "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

**1.3 DEFINITIONS**

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

**1.4 PERFORMANCE REQUIREMENTS**

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.

- C. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7.
- D. FM Approvals Listing: Provide membrane roofing, base flashings, and component materials that comply with requirements in FM Approvals 4450 and FM Approvals 4470 as part of a membrane roofing system, and that are listed in FM Approvals' "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals' markings.
  - 1. Fire/Windstorm Classification: Class 1A-90.
  - 2. Hail Resistance: MH.

## 1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Base flashings and membrane terminations.
  - 2. Tapered insulation, including slopes.
  - 3. Roof plan showing orientation of steel roof deck and orientation of membrane roofing.
  - 4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
- C. Samples for Verification: For the following products, in manufacturer's standard sizes:
  - 1. Sheet roofing, of color specified, including T-shaped side and end lap seam.
  - 2. Roof insulation.
  - 3. Six insulation fasteners of each type, length, and finish.
  - 4. Six roof cover fasteners of each type, length, and finish.
- D. Qualification Data: For qualified Installer and manufacturer.
- E. Manufacturer Certificate: Signed by roofing manufacturer certifying that membrane roofing system complies with requirements specified in "Performance Requirements" Article.
  - 1. Submit evidence of complying with performance requirements.
- F. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
- G. Research/Evaluation Reports: For components of membrane roofing system, from the ICC-ES.

- H. Field quality-control reports.
- I. Maintenance Data: For membrane roofing system to include in maintenance manuals.
- J. Warranties: Sample of special warranties.

## 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is FM Approvals approved for membrane roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by membrane roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

## 1.7 DELIVERY, STORAGE, AND HANDLING

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

## 1.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

## 1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace

components of membrane roofing system that fail in materials or workmanship within specified warranty period.

1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, substrate board, roofing accessories, and other components of membrane roofing system.
2. Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 EPDM MEMBRANE ROOFING

A. EPDM: ASTM D 4637, Type I, non-reinforced, uniform, flexible EPDM sheet.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. BASIS OF DESIGN: Carlisle Sure-Seal EPDM
  - b. ERSystems.
  - c. Firestone Building Products.
  - d. GAF Materials Corporation.
  - e. GenFlex Roofing Systems.
  - f. International Diamond Systems.
  - g. Johns Manville.
  - h. Mule-Hide Products Co., Inc.
  - i. Protective Coatings, Inc.
  - j. Roofing Products International, Inc.
  - k. StaFast Building Products.
  - l. Versico Incorporated.
2. Thickness: 60 mils, nominal.
3. Exposed Face Color: Black.
4. Polyester Reinforced

### 2.2 AUXILIARY MEMBRANE ROOFING MATERIALS

- A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.
- C. Protection Sheet: Epichlorohydrin or neoprene non-reinforced flexible sheet, 55- to 60-mil- thick, recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil.

- D. Bonding Adhesive: Manufacturer's standard.
- E. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 3-inch- wide minimum, butyl splice tape with release film.
- F. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.
- G. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- H. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- I. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick, prepunched.
- J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

## 2.3 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by EPDM membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
- C. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated.
- D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

## 2.4 INSULATION ACCESSORIES

- A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with membrane roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.
- C. Modified Asphaltic Insulation Adhesive: Insulation manufacturer's recommended modified asphalt, asbestos-free, cold-applied adhesive formulated to attach roof insulation to substrate or to another insulation layer.



- D. Bead-Applied Insulation Adhesive: Insulation manufacturer's recommended bead-applied, low-rise, one- or multicomponent urethane adhesive formulated to attach roof insulation to substrate or to another insulation layer.
- E. Full-Spread Applied Insulation Adhesive: Insulation manufacturer's recommended spray-applied, low-rise, two-component urethane adhesive formulated to attach roof insulation to substrate or to another insulation layer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
  - 1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
  - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
  - 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Division 5 Section "Steel Deck."
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- D. Install acoustical roof deck rib insulation strips, specified in Division 5 Section "Steel Deck," according to acoustical roof deck manufacturer's written instructions, immediately before installation of overlying construction and to remain dry.

### 3.3 INSULATION INSTALLATION

- A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Install tapered insulation under area of roofing to conform to slopes indicated.
- D. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
  - 1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- G. Mechanically Fastened and Adhered Insulation: Install first layer of insulation to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
  - 1. Fasten first layer of insulation according to requirements in FM Approvals' "RoofNav" for specified Windstorm Resistance Classification.
  - 2. Fasten first layer of insulation to resist uplift pressure at corners, perimeter, and field of roof.
  - 3. Set each subsequent layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
  - 4. Set each subsequent layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.4 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

### 3.5 COATING INSTALLATION

- A. Apply coatings to membrane roofing according to manufacturer's written recommendations, by spray, roller, or other suitable application method.

### 3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing agency to perform inspections.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- C. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.
- D. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

### 3.7 PROTECTING AND CLEANING

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

END OF SECTION 07 53 23

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**SECTION 07 54 20  
POLYVINYL-CHLORIDE (PVC) ROOFING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. This Section includes the following:
  - 1. Mechanically fastened sheet roofing.
  - 2. Roof insulation.
  - 3. Walkway pads.
- B. Related Sections include the following:
  - 1. Division 6, Section 06 10 00 - ROUGH CARPENTRY for wood nailers, curbs, and blocking.
  - 2. Division 7, Section 07 6 20 - SHEET METAL FLASHING AND TRIM for metal roof penetration flashing, base flashing, and counterflashing.
- C. Provide roofing system and installation that does not invalidate the existing roofing warranties.

**1.3 DEFINITIONS**

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary of "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work not otherwise defined in this Section.

**1.4 PERFORMANCE REQUIREMENTS**

- A. General: Install sheet membrane roofing and base flashing that are watertight; will not permit the passage of liquid water; and will withstand wind loads, thermally induced movement, and exposure to weather without failure.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing system manufacturer based on testing and field experience.

- C. FM Listing: Provide sheet membrane, base flashing, and component materials that meet requirements of FM 4450 and FM 4470 as part of a roofing system and that are listed in FM's "Approval Guide Roof Nav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM markings.

- 1. Roofing system shall comply with the following:

- a. Fire/Windstorm Classification: Class 1A-90.

## 1.5 SUBMITTALS

- A. Product Data: For each type of roofing product specified. Include installation instructions and general recommendations from manufacturers of single-ply membrane system for types of roofing required. Include data substantiating that materials comply with requirements.
- B. Shop Drawings: Include plans, sections, and details of roof configuration, sheet layout, seam locations, colors (as applicable), details at perimeter and special conditions. Indicate layout of tapered insulation materials, including slopes. Shop drawings shall be at the same scale as the Construction Document roof plan drawings.
- C. Samples for Verification: Of the following products:
  - 1. 12-by-12-inch square of sheet roofing, of color specified, including T-shaped side and end lap seam.
  - 2. 12-by-12-inch square of roof insulation.
  - 3. 12-by-12-inch square tapered insulation, one each at adjacent slopes of cricket.
  - 4. 6 insulation fasteners of each type, length, and finish.
  - 5. 6 roof cover fasteners of each type, length, and finish.
- D. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install the specified roofing system.
- E. Manufacturer Certificates: Signed by roofing manufacturer certifying that the roofing system complies with requirements specified in the "Performance Requirements" Article. Upon request, submit evidence of meeting requirements.
- F. Product Test Reports: Based on evaluation of tests performed by manufacturer and witnessed by a qualified independent testing agency, indicate compliance of components of membrane roofing system with requirements based on comprehensive testing of current product compositions.
  - 1. Provide test data for pullout resistance of fastening systems.

- G. Maintenance Data: For roofing system to include in the maintenance manuals specified in Division 1.
- H. Warranty: Sample copy of standard roofing system manufacturer's warranty stating obligations, remedies, limitations, and exclusions of warranty.
- I. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.
- J. Preliminary Roofing Conference and Pre-installation Conference records.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in Maintenance Manuals.

#### 1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed or FM Approvals approved for membrane roofing system identical to that used for this Project.
- B. Installer Qualifications: Engage an experienced installer to perform work of this Section who has specialized in installing roofing similar to that required for this Project and who is approved, authorized, or licensed by the roofing system manufacturer to install manufacturer's product.
- C. Source Limitations: Obtain primary flexible sheet roofing from a single manufacturer. Provide secondary materials as recommended by manufacturer of primary materials.
- D. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method indicated below by UL, FM, Warnock Hershy or other testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
  - 1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and slopes indicated.
  - 2. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing materials are a part.
- E. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site. Meet with the same participants and review the same items listed for the preinstallation conference. In addition, review status of submittals and coordination of work related to roof construction. Notify participants at least 5 working days before conference.
- F. Preinstallation Conference: Before installing roofing system, schedule preinstallation conference to be held at the Project site to comply with requirements

of Division 1 Section "Project Meetings." Notify participants at least 5 working days before conference.

1. Meet with Owner; Architect; Owner's insurer, if applicable; testing and inspecting agency representative; roofing Installer; roofing system manufacturer's representative; deck Installer; and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of deck during and after roofing.
6. Review base flashing, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing.
7. Review governing regulations and requirements for insurance, certificates, and inspection and testing, if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.
10. Document proceedings, including corrective measures or actions required, and furnish copy of record to each participant.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components. Protect CSPE sheet material from curing until installed.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid materials from direct sunlight.
  1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with

insulation manufacturer's written instructions for handling, storing, and protecting during installation.

- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

## 1.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit roofing to be installed according to manufacturers' written instructions and warranty requirements.

## 1.9 WARRANTY

- A. General Warranty: The warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

- B. Manufacturer's Warranty: Submit executed copy of roof membrane manufacturer's "Limited Service Warranty" agreement including flashing endorsement and without monetary limitation, agreeing to promptly repair leaks resulting from defects in materials or workmanship, signed by an authorized representative of manufacturers. Provide form that was published with product literature as of date of Contract Documents, for the following:

- 1. Warranty Period: 20 years after date of Substantial Completion.

- B. Installer's Warranty: Submit roofing installer's warranty on warranty form at the end of this Section, signed by the installer, covering Work of this Section, including all components of membrane roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders and other accessories for the following warranty period:

- 1. Warranty Period: Two years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products but are not limited to the following:

- 1. PVC Sheet:

- a. Carlisle SynTec, Inc.
- b. Cooley Engineered Membranes; Div. of Cooley Group.
- c. Firestone Building Products Company.



- d. Flex Roofing Systems
- e. GAF Materials Corporation.
- f. DOW Roofing Systems (former Stevens).
- g. GenFlex Roofing Systems.
- h. Johns Manville Roofing Systems
- i. Mule-Hide Products Co.
- j. Sarnafil Inc.
- k. Soprema, Inc.
- l. Flex Membrane International
- m. Tremco
- n. Versico Roofing Systems
- o. IB Roof Systems

- 2. Preformed Roof Board Insulation: Manufactured by PVC membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application of thicknesses indicated.

## 2.2 PVC SHEET

- A. CSPE Sheet: 80-mil-thick, fabric-reinforced sheet, complying with ASTM D 4434, Type III.
  - 1. Exposed Face Color: White.
  - 2. Tensile Strength (ASTM D412): 1,000 psi.

## 2.3 AUXILIARY MATERIALS

- A. General: Furnish auxiliary materials recommended by roofing system manufacturer for intended use and compatible with CSPE membrane roofing.
  - 1. Furnish liquid-type auxiliary materials that meet VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet membrane.
- C. Bonding Adhesive: Manufacturer's standard bonding adhesive for membrane and for base flashing.

- D. Slip Sheet: Manufacturer's standard slip sheet, of type and thickness required for application.
- E. Metal Termination Bars: Manufacturer's standard aluminum bars, approximately 1 inch wide, with anchors.
- F. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions of FM 4470, designed for fastening sheet to substrate, and acceptable to roofing system manufacturer.
- G. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashing, preformed inside and outside corner sheet flashing, cant strips, tapered edge strips, tapers, flashing cement T-joint covers, seam caulk, termination reglets, solvents, and other accessories recommended by roofing system manufacturer for intended use.
- H. Sheet Seaming System: Manufacturer's standard materials for sealing lapped joints, including edge sealer to cover exposed spliced edges as recommended by roofing system manufacturer.

## 2.4 THERMAL BARRIER

- A. Thermal Barrier: Type X gypsum wall board, ASTM C 36, 5/8 inch thick.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions of FM 4470, designed for fastening thermal barrier to substrate.

## 2.5 INSULATION MATERIALS

- A. General: Provide preformed roof insulation boards that comply with requirements, selected from manufacturer's standard sizes and of thicknesses indicated.
  - 1. Provide preformed, tapered insulation boards where indicated for sloping to drain. Fabricate with the following taper:
    - a. 1/4 inch per 12 inches, unless otherwise indicated.
  - 2. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

## 2.6 INSULATION ACCESSORIES

- A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatible with sheet roofing material.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions of FM 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

## 2.7 WALKWAYS

- A. Walkway Pads: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads, approximately 3/16 inch thick, of materials acceptable to roofing system manufacturer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions under which roofing will be applied, with Installer present, for compliance with requirements.
- B. Verify that roof openings and penetrations are in place and set and braced and that roof drains are properly clamped into position.
- C. Verify that wood nailers are in place and secured and match thicknesses of insulation required.
- D. Do not proceed with installation until unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean substrate of dust, debris, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of the roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

### 3.3 THERMAL BARRIER

- A. Install thermal barrier with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt thermal-barrier boards together.
  - 1. Secure thermal barrier to top flanges of steel deck according to recommendations of FM's "Approval Guide" for specified Windstorm Resistance Classification.
- B. Install slip sheet over deck before application of insulation, if required by roof system manufacturer.

### 3.4 INSULATION INSTALLATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with roofing system manufacturer's written instructions for installing roof insulation.
- C. Install tapered insulation under area of roofing to conform to slopes indicated and to Shop Drawings.
- D. Install one or more layers of insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2 inches or greater, install required thickness in 2 or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
  - 1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- G. Attached Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type indicated.
  - 1. Fasten insulation according to requirements of FM's "Approval Guide" for specified Windstorm Resistance Classification and the insulation and roofing system manufacturers' written instructions, but not less than 1 fastener for each 4 sq. ft. and at least 2 fasteners per board.

### 3.5 MECHANICALLY FASTENED SHEET INSTALLATION

- A. Install PVC sheet over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
  - 1. Install sheet according to ASTM D5082.
- B. Start installation of sheet in presence of roofing system manufacturer's technical personnel.
- C. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Mechanically fasten sheet securely at terminations and perimeter of roofing.

- E. Apply roofing sheet perpendicular to the long dimension of the insulation board substrate, with side laps shingled with slope of deck where possible.
- F. Spread sealant bed over deck drain flange at deck drains and securely seal roofing sheet in place with clamping ring.
- G. In-Seam Attachment: Secure one edge of the sheet using fastening plates or battens centered within the membrane seam and mechanically fasten sheet to roof deck. Field-weld seam according to "Seam Installation" Article.
- H. Install sheet and auxiliary materials to tie in to existing roofing.

### 3.6 SEAM INSTALLATION

- A. Clean seam areas, overlap sheets, and weld side and end laps of sheets and flashings according to manufacturer's written instructions to ensure a watertight seam installation. Complete welding of seams within 24 hours of exposing sheet. Weld seam with hot-air method, as standard with roofing system manufacturer.
- B. Test lap edges with probe to verify seam weld continuity. Apply seam calk to seal cut edges of sheet membrane.
- C. Repair tears, voids, and lapped seams in roofing that does not meet requirements.

### 3.7 FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of flashing sheet at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with sheet flashing as recommended by manufacturer.
- D. Clean seam areas, overlap sheets, and firmly roll flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation. Complete welding of seams within 24 hours of exposing CSPE sheet or before curing of CSPE sheet has begun.
- E. Test lap edges with probe to verify seam weld continuity. Apply seam calk to seal cut edges of sheet flashing.
- F. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

### 3.8 WALKWAY INSTALLATION

- A. Walkways: Install walkway pads in locations indicated. Heat weld or adhere walkway pads to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

### 3.9 FIELD QUALITY CONTROL

- A. Verify field strength of seams a minimum of twice daily, according to manufacturer's written instructions, and repair seam sample areas.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation upon completion and submit report to Architect.
  - 1. Notify Architect and Owner 72 hours in advance of the date and time of inspection.

### 3.10 PROTECTING AND CLEANING

- A. Protect sheet membrane roofing from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing that does not comply with requirements, repair substrates, reinstall roofing, and repair sheet flashing to a condition free of damage and deterioration at the time of Substantial Completion and according to warranty requirements.

END OF SECTION 07 54 20

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**SECTION 07 32 00  
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 1 Specification Sections, apply to this section.

**1.2 SUMMARY**

- A. General: Provide all labor, material, equipment, related services and supervision required, including manufacturing, erection and installation for sheet metal flashing and trim in accordance with the requirements of the Contract Documents.
- B. The extent of sheet metal flashing and trim is shown on the drawings.
- C. This section includes sheet metal flashing and trim in the following categories:
  - 1. Exposed trim.
  - 2. Metal flashing.
  - 3. Miscellaneous sheet metal accessories.

**1.3 PERFORMANCE REQUIREMENTS**

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing.

**1.4 SUBMITTALS**

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data including manufacturer's material and finish data, installation instructions, and general recommendations for each specified flashing material and fabricated product.
- C. Shop Drawings of each item specified showing layout, profiles, methods of joining, and anchorage details.
- D. Samples of sheet metal flashing, trim, and accessory items, in the specified finish. Where finish involves normal color and texture variations, include Sample sets composed of 2 or more units showing the full range of variations expected.
  - 1. 8-inch-square Samples of specified sheet materials to be exposed as finished surfaces.
  - 2. 12-inch-long Samples or 8-inch square Samples of factory-fabricated products exposed as finished work. Provide complete with specified factory finish.

**1.5 QUALITY ASSURANCE**

- A. Installer Qualifications: Engage an experience Installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

## 1.6 PROJECT CONDITIONS

- A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance, durability of work, and protection of materials and finishes.

## PART 2 - PRODUCTS

### 2.1 METALS

- A. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated and with not less than the strength and durability of alloy and temper designated below:
  - 1. Extruded Aluminum: ASTM B 221, alloy 6063-T52, with a minimum thickness of 0.080 inch for primary legs of extrusions that are anodized, unless otherwise indicated.

### 2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.
- B. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil (0.4-mm) dry film thickness per coat.
- C. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- D. Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed and complying with requirements for joint sealants as specified in Division 7, Section 07 92 00 - JOINT SEALANTS.
- E. Epoxy Seam Sealer: 2-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior and interior nonmoving joints, including riveted joints.
- F. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.
- G. Paper Slip Sheet: 5-lb/square red rosin, sized building paper conforming to FS UU-B-790, Type I, Style 1b.
- H. Polyethylene Underlayment: ASTM D 4397, minimum 6-mil-thick black polyethylene film, resistant to decay when tested according to ASTM E 154.



- I. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching the material being installed; noncorrosive; size and thickness required for performance.
- J. Gutter Screen: 1/4-inch hardware cloth installed in sheet metal frames. Fabricate screen and frame of same basic material as gutters and downspouts.
- K. Roofing Cement: ASTM D 4586, Type I, asbestos free, asphalt based.

## 2.3 FABRICATION, GENERAL

- A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.
- B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal. Shop-fabricate work to the greatest extent possible.
- C. Form exposed sheet metal work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.
- D. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Use concealed fasteners for additional strength.
- E. Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- G. Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.
- H. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
- I. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
  - 1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

## 2.4 SHEET METAL FABRICATIONS

- A. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.
- B. Roof-Drain Flashing: Fabricate from the following material:
  - 1. Lead: 4.0 lb/sq. ft., hard tempered.
- C. Exposed Trim: Fabricate from the following material:
  - 1. Aluminum: 0.050 inch thick.
- D. Drip Edges: Fabricate from the following material:
  - 1. Aluminum: 0.0320 inch thick.
  - 2. Stainless Steel: 0.0156 inch thick.

## 2.5 ALUMINUM FINISHES

- A. General: Comply with Aluminum Association's (AA) "Designation System for Aluminum Finishes" for finish designations and application recommendations.
- B. Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 606.1 or AAMA 608.1.
  - 1. Color: Match fascia.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.
- B. Install exposed sheet metal work that is without oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- C. Roof-Edge Flashings: Secure metal flashings at roof edges according to FM Loss Prevention Data Sheet 1-49 for specified wind zone and cladding wind load, criteria indicated on the architectural drawings. Use most stringent requirements.

- D. Expansion Provisions: Provide for thermal expansion of exposed sheet metal work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- E. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches, except where pretinned surface would show in finished work.
  - 1. Do not solder aluminum.
  - 2. Pretinning is not required for the following metals:
    - a. Lead.
  - 3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
- F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.
  - 1. Use joint adhesive for nonmoving joints specified not to be soldered.
- G. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- H. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
- I. Separations: Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.
  - 1. Underlayment: Where installing stainless steel or aluminum directly on cementitious or wood substrates, install a slip sheet of red-rosin paper and a course of polyethylene underlayment.
  - 2. Bed flanges of work in a thick coat of roofing cement where required for waterproof performance.
- J. Roof-Penetration Flashing: Coordinate roof-penetration flashing installation with roofing and installation of items penetrating roof. Install flashing as follows:
  - 1. Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing.
  - 2. Seal and clamp flashing to pipes penetrating roof, other than lead flashing on vent piping.

### 3.3 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces, removing substances that will cause corrosion of metal or deterioration of finishes.
- B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

END OF SECTION 07 62 00

**BISHOP INTERNATIONAL AIRPORT  
TERMINAL ROOF REPLACEMENT PROJECT  
FLINT, MICHIGAN**

**SECTION 07 71 00  
ROOF SPECIALTIES**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. Section Includes:
  - 1. Copings.
  - 2. Roof-edge flashings.
  - 3. Roof-edge drainage systems.
  - 4. Reglets and counterflashings.
- B. Related Sections:
  - 1. Division 6 Section "Rough Carpentry" for wood nailers, curbs, and blocking.
  - 2. Division 7 Section "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim..
  - 3. Division 7 Section "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.
  - 4. Division 7 Section "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

**1.3 PERFORMANCE REQUIREMENTS**

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. FM Approvals' Listing: Manufacture and install copings and roof-edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification Class 1-120. Identify materials with FM Approvals' markings.
- C. SPRI Wind Design Standard: Manufacture and install copings and roof-edge specialties tested according to SPRI ES-1 and capable of resisting the following design pressures:
  - 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, hole elongation,

**ROOF SPECIALTIES**

**07 71 00 - 1**

overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof specialties. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work. Include the following:
  1. Details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
  2. Pattern of seams and layout of fasteners, cleats, clips, and other attachments.
  3. Details of termination points and assemblies, including fixed points.
  4. Details of special conditions.
- C. Samples for Initial Selection: For each type of roof specialty indicated with factory-applied color finishes.
- D. Samples for Verification: For copings made from 12-inch lengths of full-size components including fasteners, cover joints, accessories, and attachments.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for copings and roof-edge flashings.
- B. Warranty: Sample of special warranty.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.

#### 1.7 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site.
  1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects roof specialties including installers of roofing materials and accessories.
  2. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
  3. Review special roof details, roof drainage, and condition of other construction that will affect roof specialties.

## 1.8 DELIVERY, STORAGE, AND HANDLING

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

## 1.9 COORDINATION

- A. Coordinate installation of manufactured roof specialties with interfacing and adjoining construction to provide a leakproof, secure and noncorrosive installation.

## 1.10 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 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 EXPOSED METALS

- A. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
  - 1. Surface: Smooth, flat finish.
  - 2. Mill Finish: As manufactured.
  - 3. Exposed Coil-Coated Finishes: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - a. Two-Coat Fluoropolymer: AAMA 620. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.

- B. Aluminum Extrusions: ASTM B 221 alloy and temper recommended by manufacturer for type of use and finish indicated, finished as follows:
  - 1. Exposed High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - a. Two-Coat Fluoropolymer: AAMA 2605. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
  - 2. Clear Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

## 2.2 CONCEALED METALS

- A. Aluminum Sheet: ASTM B 209, alloy and temper recommended by manufacturer for type of use and structural performance indicated, mill finished.
- B. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by manufacturer for type of use and structural performance indicated, mill finished.
- C. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304.
- D. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation.

## 2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
- B. 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.
  - 1. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F.
  - 2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F.
  - 3. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Carlisle Coatings & Waterproofing; CCW WIP 300HT.
    - b. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra.
    - c. Henry Company; Blueskin PE200 HT.
    - d. Metal-Fab Manufacturing, LLC; MetShield.
    - e. Owens Corning; WeatherLock Metal High Temperature Underlayment.
- C. Polyethylene Sheet: 6-mil-thick polyethylene sheet complying with ASTM D 4397.



- D. Slip Sheet: Building paper, 3-lb/100 sq. ft. minimum, rosin sized.

## 2.4 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. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
  - 1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
  - 2. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.
  - 3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
  - 4. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A 153/A 153M or ASTM F 2329.
- C. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

## 2.5 COPINGS

- A. Copings: Manufactured coping system consisting of formed-metal coping cap in section lengths not exceeding 12 feet, concealed anchorage; corner units, end cap units, and concealed splice plates with same finish as coping caps.
  - 1. Coping-Cap Material: Formed aluminum, 0.080 inch thick.
    - a. Finish Two-coat fluoropolymer.
    - b. Color: Match Architect's samples.
  - 2. Corners: Factory mitered and soldered.
  - 3. Coping-Cap Attachment Method: Face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material.
  - 4. Face Leg Cleats: Concealed, continuous galvanized-steel sheet.

## 2.6 ROOF-EDGE FLASHINGS

- A. Canted Roof-Edge Fascia and Gravel Stop: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet and a continuous formed galvanized-steel sheet cant, 0.028 inch thick, minimum, with extended vertical leg terminating in a drip-edge cleat. Provide matching corner units.
  - 1. Fascia Cover: Fabricated from the following exposed metal:

- a. Formed Aluminum: 0.063 inch thick.
  - 2. Corners: Factory mitered and soldered.
  - 3. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
  - 4. Fascia Accessories: Overflow scuppers.
- B. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet and a continuous formed- or extruded-aluminum anchor bar with integral drip-edge cleat to engage fascia cover. Provide matching corner units.
- 1. Fascia Cover: Fabricated from the following exposed metal:
    - a. Formed Aluminum: 0.063 inch thick.
  - 2. Corners: Factory mitered and soldered.
  - 3. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
  - 4. Fascia Accessories: Overflow scuppers.
- C. One-Piece Gravel Stops: Manufactured, one-piece, metal gravel stop in section lengths not exceeding 12 feet, with a horizontal flange and vertical leg, drain-through fascia terminating in a drip edge, and concealed splice plates of same material, finish, and shape as gravel stop. Provide matching corner units.
- 1. Fabricate from the following exposed metal:
    - a. Formed Aluminum: 0.050 inch thick.
  - 2. Corners: Factory mitered and soldered.
- D. Aluminum Finish: Two-coat fluoropolymer.
- 1. Color: Match Architect's sample.

## 2.7 REGLETS AND COUNTERFLASHINGS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Castle Metal Products.
  - 2. Cheney Flashing Company.
  - 3. Fry Reglet Corporation.
  - 4. Heckmann Building Products Inc.
  - 5. Hickman Company, W. P.
  - 6. Keystone Flashing Company, Inc.
  - 7. Metal-Era, Inc.
  - 8. Metal-Fab Manufacturing, LLC.
  - 9. MM Systems Corporation.
  - 10. National Sheet Metal Systems, Inc.

## 2.8 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are 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. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install with adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches).
- B. Self-Adhering Sheet Underlayment: Install wrinkle free. Apply primer if required by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply in shingle fashion to shed water. Overlap edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.
- C. Slip Sheet: Install with tape or adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

### 3.3 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties 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 roof-specialty systems.

1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
  2. Provide uniform, neat seams with minimum exposure of solder and sealant.
  3. Install roof specialties to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
  4. Torch cutting of roof specialties is not permitted.
  5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
1. Coat concealed side of uncoated aluminum roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
  2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of self-adhering, high-temperature sheet underlayment.
  3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise shown on Drawings.
  2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal joints with sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for watertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.

### 3.4 COPING INSTALLATION

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor copings to meet performance requirements.
1. Interlock face leg drip edge into continuous cleat anchored to substrate at manufacturer's required spacing that meets performance requirements.

Anchor back leg of coping with screw fasteners and elastomeric washers at manufacturer's required spacing that meets performance requirements.

### 3.5 ROOF-EDGE FLASHING INSTALLATION

- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

### 3.6 CLEANING AND PROTECTION

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

END OF SECTION 07 71 00

**BISHOP INTERNATIONAL AIRPORT  
TERMINAL ROOF REPLACEMENT PROJECT  
FLINT, MICHIGAN**

**SECTION 07 72 00  
ROOF ACCESSORIES**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. This Section includes roof curbs and equipment supports and lightning protection attachment devices for standing seam metal roofs.
- B. Related Sections include the following:
  - 1. Division 6, Section 06 10 00 - ROUGH CARPENTRY for roof sheathing, wood cants, and wood nailers.
  - 2. Division 7, Section 07 54 20 - POLYVINYL-CHLORIDE (PVC) ROOFING
  - 3. Division 7, Section 07 62 00 - SHEET METAL FLASHING AND TRIM for shop- and field-fabricated metal flashing and counterflashing, scuppers, gutters and downspouts, fascia, roof expansion-joint covers, valleys, and miscellaneous sheet metal trim and accessories.

**1.3 SUBMITTALS**

- A. Product Data: For each type of product indicated. Include construction details, materials, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation details. Indicate dimensions, weights, loading, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other Work.
- C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for roof accessories with factory-applied color finishes.

**1.4 QUALITY ASSURANCE**

- A. Standards: Comply with the following:
  - 1. SMACNA - "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap flashing to coordinate with type of roofing indicated.
  - 2. NRCA - "Roofing and Waterproofing Manual" details for installing units.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Roof Curbs and Equipment Supports:
    - a. Custom Curb, Inc.
    - b. Pate Co.(The).
    - c. ThyCurb, Inc.

### 2.2 MATERIALS, GENERAL

- A. Galvanized Steel Sheet: ASTM A 653 with G90 coating designation; commercial quality, unless otherwise indicated.
  - 1. Structural Quality: Grade 40, where indicated or as required for strength.
- B. Extruded Aluminum: ASTM B221, alloy 6063-T52 or alloy and temper required to suit structure and finish requirements.
- C. Insulation: Manufacturer's standard rigid or semirigid glass-fiber board of thickness indicated.
- D. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, complying with AWPA C2; not less than 1-1/2 inches thick.
- E. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.
  - 1. Where removing exterior exposed fasteners affords access to building, provide nonremovable fastener heads.
- F. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, or PVC; or flat design of foam rubber, sponge neoprene, or cork.
- G. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- H. Elastomeric Sealant: Generic type recommended by unit manufacturer that is compatible with joint surfaces; comply with Federal Specification TT-S-00227E, TT-S-00230C, or TT-S-001543A or ASTM C 920, Type S, Grade NS, Class 25, and Uses NT, G, A, and, as applicable to joint substrates indicated.

### 2.3 ROOF CURBS AND EQUIPMENT SUPPORTS

- A. General: Provide roof curbs and equipment supports capable of supporting superimposed live and dead loads, including equipment loads and other construction to be supported on roof curbs. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.
- B. Fabrication: Unless otherwise indicated or required for strength, fabricate units from minimum 0.0747-inch-thick, structural-quality, hot-dip galvanized steel sheet; factory primed and painted as specified in "Finishes" article.
  - 1. Provide with welded or sealed mechanical corner joints.
  - 2. Provide preservative-treated wood nailers at tops of curbs and formed flange at perimeter bottom for mounting to roof.
  - 3. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
  - 4. Provide manufacturer's standard rigid or semi-rigid insulation where indicated.
  - 5. Provide formed cants and base profile coordinated with roof insulation thickness.
  - 6. Fabricate units to minimum height of 12 inches, unless otherwise indicated.
  - 7. Sloping Roofs: Where slope of roof deck exceeds 1/4 inch per foot, fabricate curb units with water diverter or cricket and with height tapered to match slope to level tops of units.

## 2.4 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.5 GALVANIZED STEEL SHEET FINISHES

- A. Surface Preparation: Clean surfaces with nonpetroleum solvent so surfaces are free of oil and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it. Clean welds, mechanical connections,



and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A 780.

1. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
- B. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-enamel finish consisting of prime coat and thermosetting topcoat, with a minimum dry film thickness of 1 mil for topcoat. Comply with paint manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils.

## 2.6 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  1. Fluoropolymer Two-Coat System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight.
  - c. Color and Gloss: Match color of standing seam metal roof system.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. General: Comply with manufacturer's written instructions. Coordinate installation of roof accessories with installation of roof deck, roof insulation, flashing, roofing membranes, penetrations, equipment, and other construction involving roof accessories to ensure that each element of the Work performs properly and that combined elements are waterproof and weathertight. Anchor roof accessories securely to supporting structural substrates so they are capable of withstanding lateral and thermal stresses, and inward and outward loading pressures.
- B. Install roof accessory items according to construction details of NRCA's "Roofing and Waterproofing Manual," unless otherwise indicated,
- C. Separation: Separate metal from incompatible metal or corrosive substrates, including wood, by coating concealed surfaces, at locations of contact, with bituminous coating or providing other permanent separation.

- D. Flange Seals: Unless otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form a seal.
- E. Cap Flashing: Where required as component of accessory, install cap flashing to provide waterproof overlap with roofing or roof flashing (as counterflashing). Seal overlap with thick bead of mastic sealant.

### 3.2 CLEANING AND PROTECTION

- A. Clean exposed surfaces according to manufacturer's written instructions. Touch up damaged metal coatings.

END OF SECTION 07 72 00

**BISHOP INTERNATIONAL AIRPORT  
TERMINAL ROOF REPLACEMENT PROJECT  
FLINT, MICHIGAN**

**SECTION 07 92 00  
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. Nonstaining silicone joint sealants.
  3. Urethane joint sealants.
  4. Immersible joint sealants.
  5. Silyl-terminated polyether joint sealants.
  6. Mildew-resistant joint sealants.
  7. Polysulfide joint sealants.
  8. Butyl joint sealants.
  9. Latex joint sealants.
- B. Related Requirements:
1. Section 07 53 23 "EPDM Roofing"

**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. Preconstruction 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.

## 1.6 PRECONSTRUCTION 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. Submit manufacturer's recommended number of pieces of each type of material, including joint substrates, joint-sealant backings, and miscellaneous materials.
  - 4. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
  - 5. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures, including use of specially formulated primers.

6. 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. Preconstruction 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 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.

B. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

## PART 2 - PRODUCTS

### 2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following:
  1. Architectural sealants shall have a VOC content of 250 g/L or less.
  2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 775 g/L or less.
- C. Low-Emitting Interior Sealants: Sealants and sealant primers shall comply with the testing and product requirements of the California Department of Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- D. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

### 2.2 SILICONE JOINT SEALANTS

- A. Silicone, S, NS, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Use NT.
- B. Silicone, S, P, T, NT: Single-component, pourable, plus 100 percent and minus 50 percent movement capability traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade P, Uses T and NT.

### 2.3 URETHANE JOINT SEALANTS

- A. Urethane, S, NS, 25, NT: Single-component, nonsag, nontraffic-use, plus 25 percent and minus 25 percent movement capability, urethane joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.

### 2.4 IMMERSIBLE JOINT SEALANTS

- A. Immersible Joint Sealants. Suitable for immersion in liquids; ASTM C 1247, **[Class 1]** **[Class 2]**; tested in deionized water unless otherwise indicated

## 2.5 SILYL-TERMINATED POLYETHER (STPE) JOINT SEALANTS

- A. STPE, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, silyl-terminated polyether joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.

## 2.6 MILDEW-RESISTANT JOINT SEALANTS

- A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

## 2.7 BUTYL JOINT SEALANTS

- A. Butyl-Rubber-Based Joint Sealants: ASTM C 1311.

## 2.8 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

## 2.9 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin)], Type O (open-cell material). Type B (bicellular material with a surface skin), or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

## 2.10 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean 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 Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Remove excess sealant from surfaces adjacent to joints.
  - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.
  - 4. Provide flush joint profile according to Figure 8B in ASTM C 1193.
  - 5. Provide recessed joint configuration of recess depth and according to Figure 8C in ASTM C 1193.
    - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

### 3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
  - 1. Extent of Testing: Test completed and cured sealant joints as follows:
    - a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
  - 2. 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.
  - 3. 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.
  - 4. 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.
  - 5. 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 nontraffic surfaces.
  - 1. Joint Locations:
    - a. Construction joints in cast-in-place concrete.
    - b. Joints between plant-precast architectural concrete units.
    - c. Joints in exterior insulation and finish systems.
    - d. Joints between metal panels.

- e. Joints between different materials listed above.
  - f. Perimeter joints between materials listed above and frames of doors, windows, and louvers.
  - g. Control and expansion joints in ceilings and other overhead surfaces.
  - h. Other joints as indicated on Drawings.
- 2. Joint Sealant: Silicone, nonstaining, S, NS, 50, NT.
  - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 07 92 00

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**SECTION 08 45 23  
FIBERGLASS SANDWICH  
PANEL ASSEMBLIES**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. Section includes the replacement panels as shown and specified. Work includes providing and installing:
1. Factory prefabricated structural insulated translucent sandwich panels
  2. Aluminum installation system
  3. Segmented Canopy Panel Assemblies (to maintain profile)
  4. Aluminum Sill Flashing
- B. Related Sections:
1. Roof Accessories: Section 077200
  2. Sheet Metal Flashing and Trim: Section 076200
  3. Joint Sealants: Section 079000
- C. Requests for substitutions must be approved in writing or by addendum no later than 10 days prior to bid date and in keeping with Division 1 of the specification.

**1.3 SUBMITTALS**

- A. Submit manufacturer's product data. Include construction details, material descriptions, profiles and finishes of components.
- B. Submit shop drawings. Include plans, elevations and details.
- C. Submit manufacturer's color charts showing the full range of colors available for factory finished aluminum.
1. When requested, submit samples for each exposed finish required, in same thickness and material indicated for the work and in size indicated below. If finishes involve normal color variations, include sample sets consisting of two or more units showing the full range of variations expected.
    - a. Sandwich panels: Two (2) 14" x 28" units
    - b. Factory finished aluminum: 5" long sections

- D. Submit Installer Certificate, signed by installer, certifying compliance with project qualification requirements.
- E. Submit product reports from a qualified independent testing agency indicating each type and class of panel system complies with the project performance requirements, based on comprehensive testing of current products. Previously completed reports will be acceptable if for current manufacturer and indicative of products used on this project.
- F. Test Reports: To be furnished by systems manufacturer in accordance with Division 1, Submittals. The manufacturer shall submit certified test reports by an independent testing organization for each type and class of panel system. Reports shall verify that the material will meet all performance requirements of this specification. Previously completed test reports will be acceptable if by current manufacturer and indicative of products used on this project. Test reports required are:
  - 1. Reports required are:
    - a. International Building Code Evaluation Report (AC 177)
    - b. Flame Spread and Smoke Developed (UL 723) – Submit UL Card
    - c. Burn Extent (ASTM D 635)
    - d. Color Difference (ASTM D 2244)
    - e. Impact Strength (UL 972)
    - f. Bond Tensile Strength (ASTM C 297 after aging by ASTM D 1037)
    - g. Bond Shear Strength (ASTM D 1002)
    - h. Beam Bending Strength (ASTM E 72)
    - i. Insulation U-Factor (NFRC 100)
    - j. NFRC System U-Factor Certification (NFRC 700)
    - k. Solar Heat Gain Coefficient (NFRC or Calculations)
    - l. Condensation Resistance Factor (AAMA 1503) (Thermally Broken only)
    - m. 1200°F Fire Resistance (SWRI)
    - n. Fall Through Resistance (ASTM E 661)
    - o. Class A Roof Covering Burning Brand (ASTM E 108)
  - 2. Proof of regular, independent quality control monitoring under a nationally recognized building code review and listing program shall be submitted.
  - 3. Complete energy and structural calculations and all above data must be submitted with any request to be included as an approved product to bid this section.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Provide project maintenance manuals.

## 1.5 QUALITY ASSURANCE

### A. Manufacturer's Qualifications:

1. Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least ten (10) consecutive years and which can show evidence of those materials being satisfactorily used on at least six projects of similar size, scope in Michigan. At least three of the projects shall have been in successful use for ten years or longer.
2. Panel system must be listed by an ANSI accredited Evaluation Service, which requires quality control inspections and fire, structural and water infiltration testing of sandwich panel systems by an accredited agency.
3. Quality control inspections shall be conducted at least once each year and shall include manufacturing facilities, sandwich panel components and production sandwich panels for conformance with AC177 "Translucent Fiberglass Reinforced Plastic (FRP) Faced Panel Wall, Roof and Skylight Systems" as issued by the ICC-ES.

B. Installer's Qualifications: Installation shall be by an experienced installer, which has been in the business of installing specified panel systems for at least five (5) consecutive years and can show evidence of satisfactory completion of projects of similar size, scope and type.

C. Submittal drawings and panel calculations to be reviewed and stamped by a Michigan registered engineer.

D. Performance Requirement: The manufacturer shall be responsible for the configuration and fabrication of the complete panel system.

E. Product Options: Drawings indicate size, dimensions and profile to structural translucent panel system. Specifications indicate performance required. Other manufacturers that can meet portions of this specification and wish to be considered alternates must comply with Division 1, Substitutions and Alternates, and can offer alternate bids for consideration using those guidelines.

## 1.6 PERFORMANCE REQUIREMENTS

A. The manufacturer shall be responsible for the configuration and fabrication of the replacement panels and aluminum installation system.

## 1.7 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions in system installation areas and indicate if dimensions on shop drawings are actual or guaranteed dimensions.

## 1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver replacement panels and aluminum installation system in manufacturer's standard protective packaging.
- B. Store replacement panels on the long edge; several inches above the ground, blocked and under cover to prevent warping in accordance with manufacturer's storage and handling instructions.

## 1.9 WARRANTY

- A. Provide manufacturer's and installer's written warranty agreeing to repair or replace replacement panels, which fail in materials or workmanship within one year from the date of delivery. Failure of materials or workmanship shall include, excessive deflection, deterioration of finish on metal in excess of normal weathering, defects in accessories, insulated translucent sandwich panels and other components of the work.
- B. General Warranty: Any warranties specified in this section shall not alter or change Owners rights and provisions received under other contract documents, and shall be in addition to those documents.
- C. Special Warranty: System manufacturer shall provide written agreement to repair or replace all defective panel and system craftsmanship for a period of five (5) years, starting at date of delivery. Installer shall provide five (5) year warranty against system leakage starting from date of installation completion.
- D. Special Aluminum Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes fail within specified warranty period. Warranty does not include normal weathering.
  - 1. Failures include, but are not limited to, cracking, crazing, peeling, chalking and fading of finishes.
  - 2. Warranty Period: Five (5) years from date of delivery.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURER

- A. The basis for this specification is for products manufactured by Structures Unlimited, Inc. Other manufacturers may bid this project provided they comply with all of the performance requirements of this specification and submit evidence thereof. Listing other manufacturers' names in this specification does not constitute approval of their products or relieve them of compliance with all the performance requirements contained herein.

- B. Structures Unlimited, Inc., Tel: (800) 225-3895 – Fax: (603) 627-0798 – Email: [pmorton@structuresunlimitedinc.com](mailto:pmorton@structuresunlimitedinc.com)

## 2.2 PANEL COMPONENTS

### A. Face Sheets:

1. Translucent faces: Manufactured from glass fiber reinforced thermoset resins, formulated specifically for architectural use.
  - a. Thermoplastic (e.g. polycarbonate, acrylic) faces are not acceptable.
  - b. Face sheets shall not deform, deflect, or drip when subjected to fire or flame.
2. Interior face sheets:
  - a. Flame spread: Underwriters Laboratories (UL) listed, which requires periodic unannounced retesting, with flame spread rating no greater than 25 and smoke developed no greater than 250 when tested in accordance with UL 723.
  - b. Burn extent by ASTM D 635 shall be no greater than 1".
3. Exterior face sheets:
  - a. Color stability: Full thickness of the exterior face sheet shall not change color more than 3 CIE Units DELTA E by ASTM D 2244 after 5 years outdoor South Florida weathering at 5° facing south, determined by the average of at least three white samples with and without a protective film or coating to ensure long-term color stability. Color stability shall be unaffected by abrasion or scratching.
  - b. Strength: Exterior face sheet shall be uniform in strength, impenetrable by hand held pencil and repel an impact minimum of 70 ft. lbs. without fracture or tear when impacted by a 3-1/4" diameter, 5 lb. free-falling ball per UL 972.
  - c. Erosion Protection: Integral, embedded-glass erosion barrier to provide maximum long-term resistance to fiber exposure. Sacrificial plastic surface films, coatings or veils not acceptable.
4. Appearance:
  - a. Exterior face sheet: Smooth, .070 thick and white in color.
  - b. Interior face sheet: Smooth, .045 thick and white in color.
  - c. Face sheets shall not vary more than  $\pm 10\%$  in thickness and be uniform in color.

### B. Grid Core:

1. Aluminum I-beam grid core shall be of 6063-T6 or 6005-T5 alloy and temper with provisions for mechanical interlocking of muntin-mullion and perimeter. Width of I-beam shall be no less than 7/16".
2. I-beam Thermal break: Minimum 1", thermoset fiberglass composite.



## C. Laminate Adhesive:

1. Heat and pressure resin type adhesive engineered for structural sandwich panel use, with minimum 25-years field use. Adhesive shall pass testing requirements specified by the International Code Council "Acceptance Criteria for Sandwich Panel Adhesives".
2. Minimum tensile strength of 750 PSI when the panel assembly is tested by ASTM C 297 after two exposures to six cycles each of the aging conditions prescribed by ASTM D 1037.
3. Minimum shear strength of the panel adhesive by ASTM D 1002 after exposure to four separate conditions:
  - a. 50% Relative Humidity at 68° F: 540 PSI
  - b. 182° F: 100 PSI
  - c. Accelerated Aging by ASTM D 1037 at room temperature: 800 PSI
  - d. Accelerated Aging by ASTM D 1037 at 182° F: 250 PSI

## 2.3 PANEL CONSTRUCTION

- A. Provide sandwich panels of flat fiberglass reinforced translucent face sheets laminated to a grid core of mechanically interlocking I-beams. The adhesive bonding line shall be straight, cover the entire width of the I-beam and have a neat, sharp edge.
  1. Thickness: 2 3/4"
  2. Light transmission: 16 %
  3. Solar heat gain coefficient: .22
  4. Panel U-factor by NFRC certified laboratory: .29
  5. Complete insulated panel system shall have NFRC certified U-factor of: .37
  6. Grid pattern: Nominal size 12" x 24"; pattern Shoji
- B. Standard panels shall deflect no more than 1.9" at 30 PSF in 10'-0" span without a supporting frame by ASTM E 72.
- C. Standard panels shall withstand 1200° F fire for minimum one hour without collapse or exterior flaming.
- D. Thermally broken panels: Minimum Condensation Resistance Factor of 80 by AAMA 1503 measured on the bond line.
- E. Roof system:
  1. Roof system shall pass Class A Roof Burning Brand Test by ASTM E 108.
- F. Roof system shall meet the fall through requirements of OSHA 1910.23 as demonstrated by testing in accordance with ASTM E 661, thereby not requiring supplemental screens or railings.

## 2.4 BATTENS AND PERIMETER CLOSURE SYSTEM

- A. Closure system: Extruded aluminum 6063-T6 and 6063-T5 alloy and temper clamp-tite screw type closure system.
- B. Sealing tape: Manufacturer's standard, pre-applied to closure system at the factory under controlled conditions.
- C. Fasteners: Various series stainless steel screws for aluminum closures, excluding final fasteners to the building.
- D. Finish: Manufacturer's factory applied finish, which meets the performance requirements of AAMA 2604. Color to be selected from manufacturers standards.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Installer shall examine substrates, supporting structure and installation conditions.
- B. Do not proceed with replacement panel installation until unsatisfactory conditions have been corrected by the general contractor.

### 3.2 PREPARATION

- A. Metal Protection:
  - 1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.
  - 2. Where aluminum will contact concrete, masonry or pressure treated wood, protect against corrosion by painting contact surfaces with bituminous paint or method recommended by manufacturer.
- B. The general contractor shall provide temporary enclosures required.

### 3.3 INSTALLATION

- A. Install the replacement panels and aluminum installation system in accordance with the manufacturer's installation recommendations and approved shop drawings.
  - 1. Anchor component parts securely in place by permanent mechanical attachment system.
  - 2. Accommodate thermal and mechanical movements.

- B. After other trades have completed work on adjacent material, carefully inspect translucent panel installation and make adjustments necessary to ensure proper installation.

#### 3.4 CLEANING

- A. Clean the replacement panels immediately after installation.
- B. Refer to manufacturer's written recommendations.

END OF SECTION 08 45 23

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Supplemental requirements applicable to Work specified in Division 26.
- B. Related Requirements:
  - 1. All equipment shall comply with the Buy American Act, UNO.

**1.2 REFERENCES**

- A. Abbreviations and Acronyms for Electrical Terms and Units of Measure:
  - 1. A: Ampere, unit of electrical current.
  - 2. AC or ac: Alternating current.
  - 3. AIC: Ampere interrupting capacity.
  - 4. AL, Al, or ALUM: Aluminum.
  - 5. AWG: American wire gauge; see ASTM B258.
  - 6. CAD: Computer-aided design or drafting.
  - 7. CB: Circuit breaker.
  - 8. CU or Cu: Copper.
  - 9. CU-AL or AL-CU: Copper-aluminum.
  - 10. EGC: Equipment grounding conductor.
  - 11. FLC: Full-load current.
  - 12. GEC: Grounding electrode conductor.
  - 13. GFCI: Ground-fault circuit interrupter.
  - 14. GFPE: Ground-fault protection of equipment.
  - 15. GND: Ground.
  - 16. IBT: Intersystem bonding termination.
  - 17. kAIC: Kiloampere interrupting capacity.
  - 18. kcmil or MCM: One thousand circular mils.
  - 19. kV: Kilovolt.
  - 20. kVA: Kilovolt-ampere.
  - 21. kVA<sub>r</sub> or kVAR: Kilovolt-ampere reactive.
  - 22. kW: Kilowatt.
  - 23. UL: Underwriters Laboratories, Inc. (standards) or UL LLC (services).
  - 24. UL CCN: UL Category Control Number.
  - 25. V: Volt, unit of electromotive force.
  - 26. V(ac): Volt, alternating current.
  - 27. V(dc): Volt, direct current.
  - 28. VA: Volt-ampere, unit of complex electrical power.
  - 29. VA<sub>r</sub>: Volt-ampere reactive, unit of reactive electrical power.
  - 30. VOM: Volt-ohm-multimeter.

31. WR: Weather resistant.

**B. Abbreviations and Acronyms for Electrical Raceway Types:**

1. EMT: Electrical metallic tubing.
2. EMT-A: Aluminum electrical metallic tubing.
3. EMT-S: Steel electrical metallic tubing.
4. EMT-SS: Stainless steel electrical metallic tubing.
5. ENT: Electrical nonmetallic tubing.
6. ERMC: Electrical rigid metal conduit.
7. ERMC-A: Aluminum electrical rigid metal conduit.
8. ERMC-S: Steel electrical rigid metal conduit.
9. ERMC-S-G: Galvanized-steel electrical rigid metal conduit.
10. ERMC-S-PVC: PVC-coated-steel electrical rigid metal conduit.
11. ERMC-SS: Stainless steel electrical rigid metal conduit.
12. FMC: Flexible metal conduit.
13. FMC-A: Aluminum flexible metal conduit.
14. FMC-S: Steel flexible metal conduit.
15. FMT: Steel flexible metallic tubing.
16. FNMC: Flexible nonmetallic conduit. See LFNC.
17. IMC: Steel electrical intermediate metal conduit.
18. LFMC: Liquidtight flexible metal conduit.
19. LFMC-A: Aluminum liquidtight flexible metal conduit.
20. LFMC-S: Steel liquidtight flexible metal conduit.
21. LFMC-SS: Stainless steel liquidtight flexible metal conduit.
22. LFNC: Liquidtight flexible nonmetallic conduit.
23. LFNC-A: Layered (Type A) liquidtight flexible nonmetallic conduit.
24. LFNC-B: Integral (Type B) liquidtight flexible nonmetallic conduit.
25. LFNC-C: Corrugated (Type C) liquidtight flexible nonmetallic conduit.
26. PVC: Rigid PVC conduit.
27. PVC-40: Schedule 40 rigid PVC conduit.
28. PVC-80: Schedule 80 rigid PVC Conduit.
29. RGS: See ERMC-S-G.
30. RMC: See ERMC.
31. RTRC: Reinforced thermosetting resin conduit.

**C. Abbreviations and Acronyms for Electrical Cable Types:**

1. AC: Armored cable.
2. CATV: Coaxial general-purpose cable.
3. CATVP: Coaxial plenum cable.
4. CATVR: Coaxial riser cable.
5. CI: Circuit integrity cable.
6. CL2: Class 2 cable.
7. CL2P: Class 2 plenum cable.
8. CL2R: Class 2 riser cable.
9. CL2X: Class 2 cable, limited use.
10. CL3: Class 3 cable.
11. CL3P: Class 3 plenum cable.

12. CL3R: Class 3 riser cable.
13. CL3X: Class 3 cable, limited use.
14. CM: Communications general-purpose cable.
15. CMG: Communications general-purpose cable.
16. CMP: Communications plenum cable.
17. CMR: Communications riser cable.
18. CMUC: Under-carpet communications wire and cable.
19. CMX: Communications cable, limited use.
20. DG: Distributed generation cable.
21. FC: Flat cable.
22. FCC: Flat conductor cable.
23. FPL: Power-limited fire-alarm cable.
24. FPLP: Power-limited fire-alarm plenum cable.
25. FPLR: Power-limited fire-alarm riser cable.
26. IGS: Integrated gas spacer cable.
27. ITC: Instrumentation tray cable.
28. ITC-ER: Instrumentation tray cable, exposed run.
29. MC: Metal-clad cable.
30. MC-HL: Metal-clad cable, hazardous location.
31. MI: Mineral-insulated, metal-sheathed cable.
32. MTW: Moisture-, heat-, and oil-resistant thermoplastic cable (machine tool wiring).
33. NM: Nonmetallic sheathed cable.
34. NMC: Nonmetallic sheathed cable with corrosion-resistant nonmetallic jacket.
35. NMS: Nonmetallic sheathed cable with signaling, data, and communications conductors, plus power or control conductors.
36. NPLF: Non-power-limited fire-alarm circuit cable.
37. NPLFP: Non-power-limited fire-alarm circuit cable for environmental air spaces.
38. NPLFR: Non-power-limited fire-alarm circuit riser cable.
39. PV: Photovoltaic cable.
40. RHH: Thermoset rubber, heat-resistant cable (high heat).
41. RHW: Thermoset rubber, moisture-resistant cable.
42. SA: Silicone rubber cable.
43. SE: Service-entrance cable.
44. SIS: Thermoset cable for switchboard and switchgear wiring.
45. TBS: Thermoplastic cable with outer braid.
46. THW: Thermoplastic, heat- and moisture-resistant cable.
47. THHN: Thermoplastic, heat-resistant cable with nylon jacket outer sheath.
48. THHW: Thermoplastic, heat- and moisture-resistant cable.
49. THWN: Thermoplastic, moisture- and heat-resistant cable with nylon jacket outer sheath.
50. TW: Thermoplastic, moisture-resistant cable.
51. XHH: Cross-linked polyethylene, heat-resistant cable.
52. XHHW: Cross-linked polyethylene, heat- and moisture-resistant cable.

D. Definitions:

1. Basic Impulse Insulation Level: Reference insulation level expressed in impulse crest voltage with a standard wave not longer than 1.5 times 50 microseconds and 1.5 times 40 microseconds.
2. Enclosure: The case or housing of an apparatus, or the fence or wall(s) surrounding an installation, to prevent personnel from accidentally contacting energized parts or to protect the equipment from physical damage. Types of enclosures and enclosure covers include the following:
  - a. Cabinet: An enclosure that is designed for either surface mounting or flush mounting and is provided with a frame, mat, or trim in which a swinging door or doors are or can be hung.
  - b. Conduit Body: A means for providing access to the interior of a conduit or tubing system through one or more removable covers at a junction or terminal point. In the United States, conduit bodies are listed in accordance with outlet box requirements.
  - c. Conduit Box: A box having threaded openings or knockouts for conduit, EMT, or fittings.
  - d. Cutout Box: An enclosure designed for surface mounting that has swinging doors or covers secured directly to and telescoping with the walls of the enclosure.
  - e. Device Box: A box with provisions for mounting a wiring device directly to the box.
  - f. Extension Ring: A ring intended to extend the sides of an outlet box or device box to increase the box depth, volume, or both.
  - g. Floor-Mounted Enclosure: A floor box and floor box cover assembly with means to mount in the floor that is sealed against the entrance of scrub water at the floor level.
  - h. Floor Nozzle: An enclosure used on a wiring system, intended primarily as a housing for a receptacle, provided with a means, such as a collar, for surface-mounting on a floor, which may or may not include a stem to support it above the floor level, and is sealed against the entrance of scrub water at the floor level.
  - i. Junction Box: A box with a blank cover that joins different runs of raceway or cable and provides space for connection and branching of the enclosed conductors.
  - j. Outlet Box: A box that provides access to a wiring system having pryout openings, knockouts, threaded entries, or hubs in either the sides or the back, or both, for the entrance of conduit, conduit or cable fittings, or cables, with provisions for mounting an outlet box cover, but without provisions for mounting a wiring device directly to the box.
  - k. Pedestal Floor Box Cover: A floor box cover that, when installed as intended, provides a means for typically vertical or near-vertical mounting of receptacle outlets above the floor's finished surface.
  - l. Pull Box: A box with a blank cover that joins different runs of raceway and provides access for pulling or replacing the enclosed cables or conductors.
  - m. Raised-Floor Box: A floor box intended for use in raised floors.

- n. Recessed Access Floor Box Cover: A floor box cover with provisions for passage of cords to recessed wiring devices mounted within a recessed floor box.
  - o. Ring: A sleeve, which is not necessarily round, used for positioning a recessed wiring device flush with the plaster, concrete, drywall, or other wall surface.
  - p. Ring Cover: A box cover, with raised center portion to accommodate a specific wall or ceiling thickness, for mounting wiring devices or luminaires flush with the surface.
  - q. Termination Box: An enclosure designed for installation of termination base assemblies consisting of bus bars, terminal strips, or terminal blocks with provision for wire connectors to accommodate incoming or outgoing conductors, or both.
- 3. Essential Electrical Systems: Those systems designed to ensure continuity of electrical power to designated areas and functions of a healthcare facility during disruption of normal power sources, and also to minimize disruption within the internal wiring system. (healthcare facilities)
  - 4. High-Performance Building: A building that integrates and optimizes on a life-cycle basis all major high-performance attributes, including energy conservation, environment, safety, security, durability, accessibility, cost-benefit, productivity, sustainability, functionality, and operational considerations.
  - 5. Jacket: A continuous nonmetallic outer covering for conductors or cables.
  - 6. Multi-Outlet Assembly: A type of surface, flush, or freestanding raceway designed to hold conductors, receptacles, and switches, assembled in the field or at the factory.
  - 7. Plenum: A compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system.
  - 8. Receptacle: A fixed connecting device arranged for insertion of a power cord plug. Also called a power jack.
  - 9. Receptacle Outlet: One or more receptacles mounted in a box with a suitable protective cover.
  - 10. Sheath: A continuous metallic covering for conductors or cables.
  - 11. UL Category Control Number: An alphabetic or alphanumeric code used to identify product categories covered by UL's Listing, Classification, and Recognition Services.
  - 12. Voltage Class: For specified circuits and equipment, voltage classes are defined as follows:
    - a. Control Voltage: Listed and labeled for use in remote-control, signaling, and power-limited circuits supplied by Class 2 or Class 3 power supplies having rated output not greater than 150 V and 5 A, allowing use of alternate wiring methods complying with NFPA 70, Article 725.
    - b. Low Voltage: Listed and labeled for use in circuits supplied by Class 1 or other power supplies having rated output not greater than 1000 V, requiring use of wiring methods complying with NFPA 70, Article 300, Part I.



**1.3 COORDINATION**

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions:
  - 1. Notify Owner no fewer than seven days in advance of proposed interruption of electrical service.
  - 2. Do not proceed with interruption of electrical service without Owner's written permission.
  - 3. Coordinate interruption with systems impacted by outage including, but not limited to, the following:
    - a. Lightning Protection System
  - 4. Value analysis proposals and requests for substitution of electrical equipment.
  - 5. Utility work coordination and class of service requests.
  - 6. Commissioning activities.

**1.4 SEQUENCING**

- A. Conduct and submit results of power system studies before submitting Product Data and Shop Drawings for electrical equipment.

**1.5 ACTION SUBMITTALS**

- A. Coordination Drawings for Structural Supports: Show coordination of structural supports for equipment and devices, including restraints and bracing for control of wind loads, with other systems, equipment, and structural supports in the vicinity.

**1.6 INFORMATIONAL SUBMITTALS**

- A. Electrical Installation Schedule: At preconstruction meeting, and periodically thereafter as dates change, provide schedule for electrical installation Work to Owner and Architect including, but not limited to, milestone dates for the following activities:
  - 1. Submission of power system studies.
  - 2. Submission of specified coordination drawings.
  - 3. Submission of action submittals specified in Division 26.
  - 4. Orders placed for major electrical equipment.
  - 5. Arrival of major electrical equipment on-site.
  - 6. Mockup reviews.
  - 7. System startup, testing, and commissioning activities for major electrical equipment.
  - 8. Requests for special inspections.
  - 9. Requests for inspections by authorities having jurisdiction.
- B. Certificates:
  - 1. Welding certificates.

- a. Include the following information:
  - 1) Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2) Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3) Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
  - 4) Detailed description of conduit support devices and interconnections on which the certification is based and their installation requirements.
  - 5) Provide equipment manufacturer's written certification that components with hazardous contents maintain containment following the design earthquake by methods required in ASCE/SEI 7-16.
  - 6) Submit evidence demonstrating compliance with these requirements for approval to authorities having jurisdiction after review and acceptance by qualified structural professional engineer.
- 2. Wind-Load Performance Certificates: Provide special certification for systems and components designated on Drawings or in the Specifications to be subject to high wind exposure and impact damage.
  - a. Include the following information:
    - 1) Provide equipment manufacturer's written certification for each designated system and component, stating that it will remain in place and operable following the design wind event and comply with requirements of authorities having jurisdiction.
    - 2) Certification must be based on ICC-ES or similar nationally recognized testing standard procedures acceptable to authorities having jurisdiction.
- C. Qualification Statements:
  - 1. For qualified regional manufacturer.
  - 2. For electrical professional engineer.
  - 3. For lightning protection system Installer.

## **1.7 QUALIFICATIONS**

- A. Welder: Installer possessing active qualifications specified in Section 014000 "Quality Requirements," with training and certification in accordance with AWS D1.1/D1.1M.
- B. Lightning Protection System Installers: Installer possessing active qualifications specified in Section 014000 "Quality Requirements," and able to present unexpired UL-Listed Installer, UL Category Control Number OWAY, credentials or unexpired LPI Master Installer credentials prior to starting installation.

**PART 2 - PRODUCTS**

**2.1 SUBSTITUTION LIMITATIONS FOR ELECTRICAL EQUIPMENT**

- A. Substitution requests for electrical equipment will be entertained under the following conditions:
  - 1. Substitution requests may be submitted for consideration prior to the Electrical Preconstruction Conference if accompanied by value analysis data indicating that substitution will comply with Project performance requirements while significantly increasing value for Owner throughout life of facility.
  - 2. Substitution requests may be submitted for consideration concurrently with submission of power system study reports when those reports indicate that substitution is necessary for safety of maintenance personnel and facility occupants.
  - 3. Contractor is responsible for sequencing and scheduling power system studies and electrical equipment procurement. After the Electrical Preconstruction Conference, insufficient lead time for electrical equipment delivery will not be considered a valid reason for substitution.

**PART 3 - EXECUTION**

**3.1 INSTALLATION OF ELECTRICAL WORK**

- A. Unless more stringent requirements are specified in the Contract Documents or manufacturers' written instructions, comply with NFPA 70 and NECA NEIS 1 for installation of Work specified in Division 26. Consult Architect for resolution of conflicting requirements.

**3.2 CLOSEOUT ACTIVITIES**

- A. Demonstration:
  - 1. With assistance from factory-authorized service representatives, demonstrate to Owner's maintenance and clerical personnel how to operate the following systems and equipment.
  - 2. Allow Owner to record training sessions.

**END OF SECTION 26 00 10**

## 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 grounding and bonding systems and equipment, plus the following special applications:
  - 1. Ground bonding common with lightning protection system.
  - 2. Foundation steel electrodes.

### 1.3 ACTION SUBMITTALS

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

### 1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals.
  - 1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
    - a. Plans showing as-built, dimensioned locations of system described in "Field Quality Control" Article, including the following:
      - 1) Ground rods.
      - 2) Ground rings.
      - 3) Grounding arrangements and connections for separately derived systems.
    - b. Instructions for periodic testing and inspection of grounding features at ground rings and grounding connections for separately derived systems based on NETA MTS.
      - 1) Tests shall determine if ground-resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if values do not.
      - 2) Include recommended testing intervals.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Certified by NETA.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

2.2 CONDUCTORS

- A. Insulated Conductors: Copper or tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
  - 1. Solid Conductors: ASTM B3.
  - 2. Stranded Conductors: ASTM B8.
  - 3. Tinned Conductors: ASTM B33.
  - 4. Bonding Cable:
  - 5. Bonding Conductor:
  - 6. Bonding Jumper:
  - 7. Tinned Bonding Jumper:

2.3 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
- B. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.
- C. Beam Clamps: Mechanical type, terminal, ground wire access from four directions, with dual, tin-plated or silicon bronze bolts.
- D. Cable-to-Cable Connectors: Compression type, copper or copper alloy.
- E. Conduit Hubs: Mechanical type, terminal with threaded hub.
- F. Lay-in Lug Connector: Mechanical type, aluminum terminal with set screw.

- G. Signal Reference Grid Clamp: Mechanical type, stamped-steel terminal with hex head screw.
- H. Straps: Solid copper, cast-bronze clamp. Rated for 600 A.
- I. Tower Ground Clamps: Mechanical type, copper or copper alloy, terminal one-piece clamp.
- J. U-Bolt Clamps: Mechanical type, copper or copper alloy, terminal listed for direct burial.
- K. Water Pipe Clamps:
  - 1. Mechanical type, two pieces with zinc-plated bolts.
    - a. Material: Tin-plated aluminum.
    - b. Listed for direct burial.
  - 2. U-bolt type with malleable-iron clamp and copper ground connector.

## 2.4 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet.
- B. Ground Plates: 1/4 inch thick, hot-dip galvanized.

## PART 3 - EXECUTION

### 3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
- B. Grounding Conductors: Green-colored insulation with continuous yellow stripe.
- C. Conductor Terminations and Connections:
  - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  - 2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
  - 3. Connections to Structural Steel: Welded connectors.

### 3.2 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at

closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

- C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
  - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
  - 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
  - 3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.
- D. Grounding and Bonding for Piping:
  - 1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
  - 2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
  - 3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
- E. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.
- F. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.
  - 1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
  - 2. Make connections with clean, bare metal at points of contact.
  - 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
  - 4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
  - 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

### 3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections with the assistance of a factory-authorized service representative.
- B. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
  2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
  3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at individual ground rods. Make tests at ground rods before any conductors are connected.
    - a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    - b. Perform tests by fall-of-potential method according to IEEE 81.
  4. Prepare dimensioned Drawings locating each ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.
- C. Grounding system will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.
- E. Report measured ground resistances that exceed the following values:
1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.
  2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
  3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.
  4. Power Distribution Units or Panelboards Serving Electronic Equipment: 1 ohm(s).
  5. Substations and Pad-Mounted Equipment: 5 ohms.
  6. Manhole Grounds: 10 ohms.
- F. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.



BISHOP INTERNATIONAL AIRPORT  
TERMINAL ROOF REPLACEMENT PROJECT  
FLINT, MICHIGAN

SECTION 26 05 26  
GROUNDING AND BONDING  
FOR ELECTRICAL SYSTEMS

END OF SECTION 26 05 26

GROUNDING AND BONDING  
FOR ELECTRICAL SYSTEMS  
26 05 26-6

**SECTION 26 05 44 - SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Round sleeves.
  - 2. Rectangular sleeves.
  - 3. Sleeve seal systems.
  - 4. Grout.
  - 5. Pourable sealants.
  - 6. Foam sealants.
- B. Related Requirements:
  - 1. Section 260010 "Supplemental Requirements for Electrical" for additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.

**1.2 ACTION SUBMITTALS**

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

**PART 2 - PRODUCTS**

**2.1 ROUND SLEEVES**

- A. Wall Sleeves, Steel:
  - 1. Description: ASTM A53/A53M, Type E, Grade B, Schedule 40, zinc coated, plain ends and integral waterstop.
- B. Wall Sleeves, Cast Iron:
  - 1. Description: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop.
- C. Pipe Sleeves, PVC:
  - 1. Description: ASTM D1785, Schedule 40.
- D. Molded Sleeves, PVC:
  - 1. Description: With nailing flange for attaching to wooden forms.

- E. Molded Sleeves, PE or PP:
  - 1. Description: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.
- F. Sheet Metal Sleeves, Galvanized Steel, Round:
  - 1. Description: Galvanized-steel sheet; thickness not less than 0.0239 inch; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.

## **2.2 RECTANGULAR SLEEVES**

- A. Sheet Metal Sleeves, Galvanized Steel, Rectangular:
  - 1. Description:
    - a. Material: Galvanized sheet steel.
    - b. Minimum Metal Thickness:
      - 1) For sleeve cross-section rectangle perimeter less than 50 inch and with no side larger than 16 inch, thickness must be 0.052 inch.
      - 2) For sleeve cross-section rectangle perimeter not less than 50 inch or with one or more sides larger than 16 inch, thickness must be 0.138 inch.

## **2.3 SLEEVE SEAL SYSTEMS**

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable or between raceway and cable.
  - 1. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
  - 2. Pressure Plates: Carbon steel.
  - 3. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating, of length required to secure pressure plates to sealing elements.

## **2.4 GROUT**

- A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
  - 1. Standard: ASTM C1107/C1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
  - 2. Design Mix: 5000 psi, 28-day compressive strength.
  - 3. Packaging: Premixed and factory packaged.

## **2.5 POURABLE SEALANTS**

- A. Description: Single-component, neutral-curing elastomeric sealants of grade indicated below.
  - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.

**2.6 FOAM SEALANTS**

- A. Description: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam. Foam expansion must not damage cables or crack penetrated structure.

**PART 3 - EXECUTION**

**3.1 INSTALLATION OF SLEEVES FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS**

- A. Sleeves for Conduits Penetrating Above-Grade, Non-Fire-Rated, Concrete and Masonry-Unit Floors and Walls:
1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
    - a. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall or floor so no voids remain. Tool exposed surfaces smooth; protect material while curing.
    - b. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
  2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
  3. Size pipe sleeves to provide 1/4 inch annular clear space between sleeve and raceway or cable, unless sleeve seal system is to be installed.
  4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
  5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inch above finished floor level. Install sleeves during erection of floors.
- B. Sleeves for Conduits Penetrating Non-Fire-Rated Wall Assemblies:
1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
  2. Seal space outside of sleeves with approved joint compound for wall assemblies.
- C. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- D. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seal systems. Size sleeves to allow for 1 inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- E. Underground, Exterior-Wall and Floor Penetrations:
1. Install steel pipe sleeves with integral waterstops. Size sleeves to allow for 1 inch annular clear space between raceway or cable and sleeve for installing sleeve seal system. Install sleeve during construction of floor or wall.
  2. Install steel pipe sleeves. Size sleeves to allow for 1 inch annular clear space between raceway or cable and sleeve for installing sleeve seal system. Grout sleeve into wall or floor opening.

**3.2 INSTALLATION OF RECTANGULAR SLEEVES AND SLEEVE SEALS**

- A. Install sleeves in existing walls without compromising structural integrity of walls. Do not cut structural elements without reinforcing the wall to maintain the designed weight bearing and wall stiffness.
- B. Install conduits and cable with no crossings within the sleeve.
- C. Fill opening around conduits and cables with expanding foam without leaving voids.
- D. Provide metal sheet covering at both wall surfaces and finish to match surrounding surfaces. Metal sheet must be same material as sleeve.

**3.3 INSTALLATION OF SLEEVE SEAL SYSTEMS**

- A. Install sleeve seal systems in sleeves in exterior concrete walls and slabs-on-grade at raceway entries into building.
- B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

END OF SECTION 26 05 44

## 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 lightning protection system for ordinary structures.
- B. Section includes lightning protection system for the following:
  - 1. Ordinary structures.

### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings:
  - 1. Include layouts of the lightning protection system, with details of the components to be used in the installation.
  - 2. Include raceway locations needed for the installation of conductors.
  - 3. Details of air terminals, ground rods, ground rings, conductor supports, splices, and terminations, including concealment requirements.
  - 4. Include roof attachment details, coordinated with roof installation.
  - 5. Calculations required by NFPA 780 for bonding of metal bodies.

### 1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Lightning protection system Shop Drawings, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
  - 1. Lightning protection cabling attachments to roofing systems and accessories.
  - 2. Lightning protection strike termination device attachment to roofing systems, coordinated with the roofing system manufacturer.
  - 3. Lightning protection system components penetrating roofing and moisture protection systems and system components, coordinated with the roofing system manufacturer.
- B. Qualification Data: For Installer.
- C. Product Certificates: For each type of roof adhesive for attaching the roof-mounted air terminal assemblies, approved by the roofing-material manufacturer.

- D. Field quality-control reports.

## 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For lightning protection system to include in maintenance manuals.
  - 1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
    - a. Dimensioned site plan showing dimensioned route of the ground loop conductor and the ground rod locations. Comply with requirements of Section 017839 "Project Record Documents."
    - b. A system testing and inspection record, listing the results of inspections and ground resistance tests, as recommended by NFPA 780, Annex D.
- B. Completion Certificate:
  - 1. UL Master Label Certificate.

## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: UL-listed installer, category OWAY.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. NFPA Lightning Protection Standard: Comply with NFPA 780 requirements for Class I buildings.
- B. UL Lightning Protection Standard: Comply with UL 96A requirements for Class I buildings.
- C. Lightning Protection Components, Devices, and Accessories: Listed and labeled by a qualified testing agency as complying with UL 96, and marked for intended location and application.

### 2.2 MATERIALS

- A. Air Terminals:
  - 1. Aluminum unless otherwise indicated.
  - 2. 3/8-inch diameter by 10 inches long.
  - 3. Rounded tip.
  - 4. Integral base support.
- B. Air Terminal Bracing:
  - 1. Aluminum.
  - 2. 1/4-inch diameter rod.

- C. Class 1 Main Conductors:
  - 1. Stranded Copper: 57,400 circular mils in diameter].
- D. Class II Main Conductors:
  - 1. Stranded Copper: 115,000 circular mils in diameter.
- E. Secondary Conductors:
  - 1. Stranded Copper: 26,240 circular mils in diameter.
- F. Conductor Splices and Connectors: Compression fittings that are installed with hydraulically operated tools, or exothermic welds, approved for use with the class type.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install lightning protection components and systems according to NFPA 780.
- B. Install conductors with direct paths from air terminals to ground connections. Avoid bends less than 90 degrees and 8 inches in radius and narrow loops.
- C. Conceal conductors within normal view from exterior locations at grade within 200 feet of building. Comply with requirements for concealed systems in NFPA 780.
  - 1. Roof penetrations required for down conductors and connections to structural-steel framework shall be made using listed through-roof fitting and connector assemblies with solid rods and appropriate roof flashings. Use materials approved by the roofing manufacturer for the purpose. Conform to the methods and materials required at roofing penetrations of the lightning protection components to ensure compatibility with the roofing specifications and warranty.
  - 2. Install conduit where necessary to comply with conductor concealment requirements.
  - 3. Air Terminals on Single-Ply Membrane Roofing: Comply with adhesive manufacturer's written instructions.
- D. Ground Ring Electrode: The conductor shall be not less than the main-size lightning conductor.

#### 3.2 CONNECTIONS

- A. Aboveground concealed connections, and connections in earth or concrete, shall be done by exothermic welds or by high-compression fittings listed for the purpose.
- B. Aboveground exposed connections shall be done using the following types of connectors, listed and labeled for the purpose: bolted connectors.
- C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.



1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.

### 3.3 CORROSION PROTECTION

- A. Do not combine materials that can form an electrolytic couple that will accelerate corrosion in the presence of moisture unless moisture is permanently excluded from junction of such materials.
- B. Use conductors with protective coatings where conditions would cause deterioration or corrosion of conductors.

### 3.4 FIELD QUALITY CONTROL

- A. Special Inspections: Engage a qualified special inspector to perform the following special inspections:
  1. Perform inspections as required to obtain a UL Master Label for system.
  2. Perform inspections to obtain an LPI certification.
- B. Prepare test and inspection reports and certificates.

END OF SECTION 26 41 13