

# PROJECT MANUAL

PREPARED FOR THE



*Titusville Florida*

## Hangar 52 Demolition Issued for Construction

At The

## Space Coast Regional Airport

Baker Project No. 169511  
FDOT FPN: 437021-1-94-01

Prepared by

**Michael Baker**  
INTERNATIONAL

515 North Flagler Drive, Suite 303  
West Palm Beach, FL 33401

**NOVEMBER 2020**

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**AT**  
**SPACE COAST REGIONAL AIRPORT**

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**INSTRUCTIONS TO BIDDERS  
FOR  
HANGAR 52 DEMOLITION  
AT  
SPACE COAST REGIONAL AIRPORT  
TITUSVILLE, FLORIDA**

**Submittal Requirements:** Submit in Duplicate - Make Photocopies. Proposal, plus the bid form, plus the Bid Schedule, plus the executed Bid Bond with attachments (either the executed Bid Bond with required attachments, or a certified check in the amount of 5% of the bid), plus addenda acknowledgement sheets, before the time and date written below. Submit these documents in duplicate (one original and one photocopy.) It is not necessary to submit the entire specification book, or to attach addenda (only the addenda acknowledgement sheet(s). **Late submissions will not be considered.** The documents shall be submitted in a large-size sealed envelope, which shall bear the name of the Bidder and shall be clearly marked in large letters, "Bid for HANGAR 52 DEMOLITION at the Space Coast Regional Airport." Bids (Proposals) may not be submitted by fax, e-mail, or in any other unsealed format in which the bid amount can be known prior to the bid opening. Bids or price quotations from subcontractor firms or suppliers, or for portions of the job, will not be considered.

Submit Bid To: Titusville-Cocoa Airport Authority  
355 Golden Knights Blvd.  
Titusville, Florida 32780

Bids must be received by: **2:00 P.M., local time, Tuesday, January 19, 2021**

**Opening of Bids:** The bids will be opened and read aloud in Airport Authority conference room, at the time and date stated above. Persons attending the Bid Opening will be given an opportunity to examine the submitted bid documents.

**Tabulation of Bids; Recommendation and Award of Contract; Duration of Bids:** The Engineer will prepare a tabulation of the prices bid for the various items and will e-mail the tabulation (as an Excel spreadsheet) if requested. Any mathematical errors in the schedule of prices bid will be corrected in the bid tabulation. If the apparent successful bidder is not well known to the Engineer and/or the Airport Staff, the Engineer will request that the bidder furnish detailed qualification information, including but not limited to a list of similar recent projects, project references with names and telephone numbers of Owner contacts, and financial information. For privacy reasons, it will be acceptable to present the financial information in a meeting with Airport staff, rather than submitting the information in

writing. Based on this information, investigation of previous projects, and verification of references, a contract award decision will be made, subject to FDOT and FAA approval. The Engineer will promptly inform the successful bidder (Contractor) of the award, and will forward contract and bond forms to the Contractor, for execution, to be received within the stipulated calendar day period after the date of receipt of bids. It shall be specifically understood that the time period (during which bids may not be withdrawn unilaterally by the bidder) applies to the date that the contract and bond forms are received by the bidder for execution, not the date that the contract is executed by the Owner, or the date the Notice to Proceed is issued, or any other date. There shall be no grounds for a claim for additional payment due to material or other cost escalation, if the Owner's agent (the Engineer) delivers the contract and bond forms to the successful bidder within said days after receipt of bids, and if the Owner executes the contract documents and returns them promptly (within several days) to the Contractor, and if there are no unreasonable delays outside the Contractor's control, to the issuance of the Notice to Proceed. Agreements between the bidder and subcontractors or suppliers are strictly between the bidder/Contractor and the subcontractors/suppliers, and do not affect the Owner's contract with the Contractor, particularly with respect to cost escalation, regardless of so-called "industry standards". The bidder shall take this into consideration, when determining the bid price.

Withdrawal or Modification of Submitted Proposals (Bids), Prior to Scheduled Time of Receipt of Bids: Oral, written, or faxed modifications to submitted bids will not be considered. Modification may only be made by formally withdrawing a previously submitted, sealed bid package and submitting a new sealed bid package, prior to the scheduled time for receipt of bids. This process is discouraged, and requires absolute proof that the person withdrawing and replacing the bid package is fully authorized by the bidding firm to do so. Similarly, withdrawal of a submitted bid without replacement, before the scheduled time of bid opening, requires a written letter of withdrawal, and absolute proof that the person requesting the withdrawal is fully authorized by the bidding firm to do so.

Stipulations In the Bid Package: Modifying, stipulating, or qualifying statements of any type included in the bid package **are strongly discouraged and may easily result in the rejection of the bid**, although such modifications or qualifications are considered an "irregularity," and the Owner is not legally obligated to reject any such bid. In lieu of modifying, stipulating, or qualifying the bid, prospective bidders are strongly advised to submit any questions (see below) in time to receive a response by addendum, which will be issued to all holders of the bidding documents. If modifying or qualifying statements are absolutely unavoidable due to major questions encountered after the final addendum has been issued, such statements shall be clearly written on the Bidder's letterhead and shall be included with the Bid.

Questions; Issuance of Addenda: Refer to Notice To Bidders

Owner's Rights: The Owner reserves the right to reject or accept any or all bids, or to enter into negotiations with any bidder. The Owner reserves the right to waive any alleged breach of

technicality. If there are various bid schedules or alternates, the “low bidder” shall be defined as the (qualified, responsive) bidder who submits the lowest bid for the actual combination of bid schedules or alternates that the Owner elects to award. The Owner reserves the right to modify the Contract Documents and rebid the project, if necessary, to meet Owner’s budgetary requirements. The Owner’s evaluation of the bids will be based on many factors, not only upon the bid price. Such factors include but are not limited to the experience and qualifications of the bidder and proposed subcontractors, general reputation, financial condition, and demonstrated ability to deliver a successful project on time. By submitting a bid, the Bidder agrees to abide by the Owner’s award decision, and refrain from contesting the award of contract.

Avoidance of Errors in Proposal: The most common errors are: (1) “back calculating” the unit price from the extended amount and rounding to the nearest cent, (2) addition error, and (3) writing the “extended amount” rather than the “unit price” in words. The unit price governs, so if it has been “back calculated” from the extended amount and rounded, there will be a small mathematical correction to the extended amount in the bid tabulation. The effect on the total bid amount is never significant, but numerous mathematical corrections on the bid tabulation, which is distributed to everyone after receipt of bids, may be embarrassing to the bidder. In the case of addition errors, it should be understood that the “total amount bid” is only considered to be a preliminary number to be read aloud at the bid opening, with no legal significance. The actual bid amount is determined after the bids have been tabulated and checked for multiplication and addition. The common error of writing the extended amount instead of the unit price in words normally has no consequence, because if the unit price and extended amount written in numerals are consistent mathematically, the bidder’s intent is clear. However, if there is an error or inconsistency in the numerals, the amount written in words is used to determine the intent, and it should be written correctly.

## **END OF INSTRUCTIONS TO BIDDERS**

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**NOTICE TO BIDDERS  
FOR  
HANGAR 52 DEMOLITION  
AT  
SPACE COAST REGIONAL AIRPORT  
TITUSVILLE, FLORIDA**

Sealed proposals for the furnishing of all labor, materials, services and equipment for the project entitled **“HANGAR 52 DEMOLITION”** at Space Coast Regional Airport will be received by the **Titusville-Cocoa Airport Authority** at the Office of the Executive Director, Space Coast Regional Airport, 355 Golden Knights Boulevard, Titusville, Florida 32780, until **2:00 P.M., local time, Tuesday, January 19, 2021**, at which time the proposals will be publicly opened and read aloud.

This project is located at the Space Coast Regional Airport within Brevard County, Florida. The scope of this project is to DEMO (3) three hangar buildings including any electrical and/or plumbing supply lines, fill existing pond area to match surrounding grade and regrading existing ditch. Drainage improvements are also included in the Hangar 52 Demolition work scope.

Notice to Proceed for this project will be issued upon completion of all preconstruction activities and permitting. Contract time from NTP is 6 Calendar Months plus 30 Days for Punchlist and Closeout.

A **NON-MANDATORY PRE-BID CONFERENCE** will be held at the Space Coast Regional Airport (355 Golden Knights Blvd, Titusville, Florida 32780) at **1:00 P.M., local time, Tuesday, January 12, 2021**, at the address above. A site visit will be conducted immediately following the meeting.

Bid Documents may be obtained in digital format from Michael Baker International on or after **Tuesday, January 5, 2021**. Bid Documents may be downloaded using a secure file transfer system (FTP link) provided by Michael Baker Jr., Inc. All requests for plans shall be sent to John Neff at [John.Neff@mbakerintl.com](mailto:John.Neff@mbakerintl.com)

The work must conform to plans and specifications, including all addenda, which may be obtained or examined on or after permit at:

Michael Baker International  
515 North Flagler Drive Suite 303  
West Palm Beach, FL 33401  
Contact Person: John Neff – [John.Neff@mbakerintl.com](mailto:John.Neff@mbakerintl.com)

Questions regarding the project must be submitted in writing via email to **John Neff at [John.Neff@mbakerintl.com](mailto:John.Neff@mbakerintl.com)** The last day for questions will be after permit at close of business.

Copies of the Plans, Specifications, and other Contract Documents may be examined at the office of the Executive Director at Space Coast Regional Airport by appointment only.

No proposals may be withdrawn after the scheduled time for receipt of proposals, for a period of **One Hundred and Twenty (120) days**.

The Titusville-Cocoa Airport Authority reserves the rights to waive any informalities or reject any and all proposals, or to re-advertise for proposals.

Proposals must be submitted as set forth in the "Proposal" included in the Contract Documents. A bid price must be submitted for each of the items listed on the bid form.

A Bid Bond or Certified Check in the amount of **5%** of the Total Amount Bid must be submitted with the proposal.

A Payment Bond and a Performance Bond, each in sum equal to 100% of the amount of the Contract awarded, will be required prior to execution of contract.

To be eligible for award of contract, the successful bidder may be requested to submit, upon request and within two (2) business days after the bid opening, evidence of financial responsibility, experience, qualifications, and satisfactory completion of previous projects, to the satisfaction of the Titusville-Cocoa Airport Authority, FAA, and FDOT.

The work performed under this Contract shall be governed by the **Federal Contract Provisions** set forth in the Contract Documents, which include, but are not limited to, Disadvantaged Business Enterprise (DBE) **(12% Goal)** subcontractor/supplier participation, Equal Employment Opportunity requirements, and compliance with **Federal Wage and Hour requirements (Davis-Bacon Act)**.

The Bidder shall agree to comply with the following requirement: "No member, officer, or employee of the Titusville-Cocoa Airport Authority during his tenure or for one year thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof".

The award of this Contract will be contingent upon the concurrence of the Federal Aviation Administration, and the Florida Department of Transportation.

**TITUSVILLE-COCOA AIRPORT AUTHORITY**

**END OF NOTICE TO BIDDERS**

## **BID REQUIREMENTS**

**SCOPE:** This project is located at the Space Coast Regional Airport within Brevard County, Florida. The scope of this project is to DEMO (3) three hangar buildings including any electrical and/or plumbing supply lines, fill existing pond area to match surrounding grade and regrading existing ditch. Drainage improvements are also included in the Hangar 52 Demolition work scope.

**TERM OF CONTRACT:** All of the work shall be substantially completed within 6 Calendar Months from Notice to Proceed (NTP). Substantial Completion shall be defined as a facility that is completed and operational based on the scope of work defined by the Contract Documents, the building and adjoining site shall be usable and occupiable by the Public for the intended purpose, all work for this project has been accepted by the Airport and the Engineer (less minor punch list items).

Punch List and Closeout Documentation: An additional 30 Calendar Days. Defined as miscellaneous repairs and correction of minor work deficiencies as identified by the Engineer, and the Airport/Owner. Includes submission and approval of all required closeout paperwork in accordance with Specification 01770 – Closeout Procedures.

**TOTAL CONTRACT TIME: 7 Calendar MONTHS from issuance of the NTP**

**RENEWAL OPTION: none**

**QUALIFICATIONS:** The respondent shall have maintained continual work experience for a period of five (5) years prior to the bid date. Respondent must submit written documentation with bid or within three (3) days of request, substantiating experience requirement. Any of the following documents are acceptable:

1. Copies of state or county licenses showing date business opened.
2. Copy of incorporation papers showing date of opening.
3. A notarized statement affirming the opening date of business.
4. A notarized statement affirming previous years of experience of the principals of the firm.

The respondent shall have a place of business for contact by the Brevard County staff during normal working days.

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# BID PROPOSAL & FORMS

**Proposal of** \_\_\_\_\_  
Company Name of Bidder

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## DRUG-FREE WORKPLACE CERTIFICATION

THE BELOW SIGNED RESPONDENT CERTIFIES that it has implemented a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under quote a copy of the statement specified in subsection 1.
4. In the statement specified in subsection 1, notify the employees that, as a condition of working on the commodities or contractual services that are under quote, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893, Florida Statutes, or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in, drug abuse assistance or rehabilitation program if such is available in employee's community, by any employee who is convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

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

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

COMPANY: \_\_\_\_\_

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

(Typed or Printed)

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

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

E-MAIL: \_\_\_\_\_

PHONE NO.: \_\_\_\_\_

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## **FEDERAL E-VERIFY COMPLIANCE CERTIFICATION**

In accordance with Executive Order Number 11-116 from the office of the Governor of the State of Florida, Respondent hereby certifies that the U.S. Department of Homeland Security's E-Verify system will be used to verify the employment eligibility of all new employees hired by the respondent during the contract term, and shall expressly require any subcontractors performing work or providing services pursuant to the contract to likewise utilize the U.S. Department of Homeland Securities E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term; and shall provide documentation such verification to the COUNTY upon request.

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As the person authorized to sign this statement, I certify that this company complies/will comply fully with the above requirements.

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

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

COMPANY: \_\_\_\_\_

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

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

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

\_\_\_\_\_

\_\_\_\_\_

E-MAIL: \_\_\_\_\_

PHONE NO.: \_\_\_\_\_

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## INDEMNIFICATION AND HOLD HARMLESS

To the fullest extent permitted by law, Respondent shall indemnify and hold harmless the Owner, its officers and employees from liabilities, damages, losses, and costs including but not limited to reasonable attorney fees, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Respondent and other persons employed or utilized by the Respondent in the performance of this Agreement.

\_\_\_\_\_  
Respondent's Company Name

\_\_\_\_\_  
Authorized Signature – Manual

\_\_\_\_\_  
Physical Address

\_\_\_\_\_  
Authorized Signature – Typed

\_\_\_\_\_  
Mailing Address

\_\_\_\_\_  
Title

\_\_\_\_\_  
Phone Number

\_\_\_\_\_  
FAX Number

\_\_\_\_\_  
Cellular Number

\_\_\_\_\_  
After-Hours Number(s)

\_\_\_\_\_  
Date

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## **CONTRACTOR INFORMATION FORM**

TO: Titusville-Cocoa Airport Authority  
355 Golden Knights Blvd.  
Titusville, FL 32780

Ladies/Gentlemen:

Having carefully examined the Proposal Documents and Drawings entitled **Hangar 52 Demolition** at the Space Coast Regional Airport, Titusville, Florida, as well as the premises and conditions affecting the work, and confirming that the sites were visited, as required, by \_\_\_\_\_  
\_\_\_\_\_(Name of Person or Persons) on \_\_\_\_\_ (date or dates) the undersigned hereby seeks qualification to furnish all labor and material and to perform all work as required by and in strict accordance with the above-named documents.

Principal Office Address: \_\_\_\_\_  
\_\_\_\_\_

(1) How many years has your organization been in business as a contractor under your present name?

\_\_\_\_\_

(2) How many years experience in construction work has your organization had as a general contractor? \_\_\_\_\_

As a Subcontractor? \_\_\_\_\_

(3) List below the requested information concerning projects your organization has completed in the last five (5) years for the type of work required in this project. (Use additional sheets if necessary.) Include the type of work similar to the work included in this contract if possible.

<u>Project Title</u>	<u>Contract Amount</u>	<u>Contractor/ Subcontractor</u>	<u>Actual Completion Date</u>	<u>Name/Address/Tel of Owner</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

(4) Have you ever failed to complete any work awarded to you? If so, where and why?

- (5) Has any officer or partner of your organization ever been an officer or partner of some other organization that failed to complete a construction contract? If so, state name of individual, name of other organization, and reason therefore.

- (6) Has any officer or partner of your organization ever failed to complete a construction contract handled in his own name? If so, state name of individual, name of owner and reason therefore.

- (7) Give below any information which would indicate the size and capacity of your organization, including number of employees, equipment owned by your organization, etc., which are available for utilization on this Contract.

- (8) What is your bonding capacity?

- (9) List any type of applicable construction equipment owned?

I, the undersigned, do hereby declare that the foregoing statements are true and correct, all as of the date hereinafter set forth, and that those examining this document have my permission to contact any or all of those parties listed in this questionnaire. Incorrect or misleading statements in this questionnaire shall be grounds for a determination of non-responsibility with respect to such contractor.

Respectfully Submitted,

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

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

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

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Address and Telephone No.)

FLORIDA STATE CONTRACTOR DATA (Required):

\*Contractor's License Number: \_\_\_\_\_

Classification: \_\_\_\_\_

\*ATTACH A COPY OF APPROPRIATE LICENSES

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## **ADDENDUM ACKNOWLEDGEMENT**

Acknowledgment is hereby made of the following addenda (identified by number) received since issuance of solicitation:

**ADDENDUM NO.** \_\_\_\_\_ **DATE** \_\_\_\_\_

**ADDENDUM NO.** \_\_\_\_\_ **DATE** \_\_\_\_\_

**ADDENDUM NO.** \_\_\_\_\_ **DATE** \_\_\_\_\_

**ADDENDUM NO.** \_\_\_\_\_ **DATE** \_\_\_\_\_

**ADDENDUM NO.** \_\_\_\_\_ **DATE** \_\_\_\_\_

NOTE: Prior to submitting the response to this solicitation, it is the responsibility of the respondent to confirm if any addenda have been issued. If such addenda have been issued, acknowledge receipt by noting number(s) and date(s) above.

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# Insert Bid Schedule

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***SUMMARY:***

1. Total Base Bid: \$ \_\_\_\_\_

(BASE BID) PRICE WRITTEN IN WORDS: \_\_\_\_\_

\_\_\_\_\_ dollars and \_\_\_\_\_ cents

**AWARD OF CONTRACT-** Contract award will be based on the lowest responsive bid for the Base Bid plus any combination of the alternates, or whichever is deemed in the County's best interest. There will be no contract award based on individual items.

\_\_\_\_\_  
(Name of Respondent)

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

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

\_\_\_\_\_  
(Mailing Address)

\_\_\_\_\_  
(City, State, Zip)

\_\_\_\_\_  
(Federal ID No. or SS No.)

END OF BID SHEET

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## **BID FORM**

### **HANGAR 52 DEMOLITION**

Proposal of: \_\_\_\_\_  
(Respondent Company Name)

Respondent agrees to furnish, unless otherwise provided, all implements, machinery, equipment, transportation, tools, materials, supplies, labor, and other things necessary for the performance and completion of the work for the amounts listed in the Schedule of Bid Items.

The undersigned Respondent hereby declares that:

1. The bid is made in good faith, without collusion or fraud and is fair and competitive in all respects.
2. A bid bond, in the form prescribed, Cashier's or Certified check, is submitted in an amount not less than five percent (5%) of the total contract amount. The Bid Bond must be attached to the bid.
3. The Respondent has carefully and to its full satisfaction examined the attached Scope of Work, Special Terms, General Conditions, technical specifications, and form of bonds, if applicable, together with accompanying plans and Respondent has read all issued addenda.
4. Respondent has made full examination of the site and is familiar with the site conditions that may impact its performance.
5. Upon receipt of Notice of Intent to Award the contract the Respondent shall commence obtaining a Performance Bond and Certificate(s) of Insurance (COI) immediately.
6. Respondent understands that the contract time starts from the date of the Notice to Proceed.
7. Respondent furthermore agrees that, in case of failure on its part to execute a Contract and provide all required documents within ten (10) calendar days of receipt of the Contract for execution, the offer to contract may be withdrawn and the check, bond, or other security accompanying its bid and the money payable thereon, shall become property of the County, by forfeit as agreed liquidated damages.
8. The Respondent states that this bid is the only bid for this project in which Respondent is interested; and Respondent shall not be a subcontractor or sub-subcontractor on this project.
9. Respondent and all affiliates, suppliers, subcontractor or consultants who will perform the Work have not been placed on the Public Entity Crimes convicted vendor list maintained by the State of Florida within 36 months immediately preceding the date of this Bid.
10. By signing and submitting the Bid, Respondent represents that all Bid Forms are fully complete and accurate.
11. Respondent acknowledges that the Bid may be rejected if all Bid Forms are not fully complete, not accurate or if forms are not signed by properly authorized signatures where required.

The Respondent agrees that the work will be substantially completed within **6 Calendar Months** after Notice to Proceed. 30 days shall be provided for punch list completion minor cleanup and project closeout for a total contract time of **7 Calendar Months**. The Respondent accepts the provisions of the bid as to Liquidated Damages, as specified, in the event of failure to complete the work within the times specified in the bid.

Name of Form: \_\_\_\_\_

HQ Address: \_\_\_\_\_ ST \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: (\_\_\_\_\_) \_\_\_\_\_ Email: \_\_\_\_\_

FEIN: \_\_\_\_\_ State of Incorporated: \_\_\_\_\_

Print Name: \_\_\_\_\_ Title: \_\_\_\_\_

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

**Failure to fully complete and sign this Bid Form may result in rejection of the Bid.**



## **SCHEDULE OF SUBCONTRACTORS**

The following is a complete list of all subcontractors utilized for this project (if applicable):

- |    |                |                  |
|----|----------------|------------------|
| 1. | _____          | _____            |
|    | (company name) | (type of work)   |
|    | _____          | _____            |
|    | (address)      | (tel. #)         |
|    | _____          | _____            |
|    | (zip code)     | (federal I.D. #) |
| 2. | _____          | _____            |
|    | (company name) | (type of work)   |
|    | _____          | _____            |
|    | (address)      | (tel. #)         |
|    | _____          | _____            |
|    | (zip code)     | (federal I.D. #) |
| 3. | _____          | _____            |
|    | (company name) | (type of work)   |
|    | _____          | _____            |
|    | (address)      | (tel. #)         |
|    | _____          | _____            |
|    | (zip code)     | (federal I.D. #) |
| 4. | _____          | _____            |
|    | (company name) | (type of work)   |
|    | _____          | _____            |
|    | (address)      | (tel. #)         |
|    | _____          | _____            |
|    | (zip code)     | (federal I.D. #) |

Authorized signature: \_\_\_\_\_

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**BIDDER'S EQUAL OPPORTUNITY REPORT STATEMENT  
AS REQUIRED AT 41 CFR 60-1.7(B)**

The Bidder (Proposer) shall complete the following statement by checking the appropriate boxes. Failure to complete these blanks may be grounds for rejection of bid.

1. The Bidder (Proposer) has (\_\_\_\_\_) has not (\_\_\_\_\_) developed and has on file at each establishment affirmative action programs pursuant to 41 CFR 60-1.40 and 41 CFR 60.2.
2. The Bidder (Proposer) has (\_\_\_\_\_) has not (\_\_\_\_\_) participated in any previous contract or subcontract subject to the equal opportunity clause prescribed by Executive Order 11246, as amended.
3. The Bidder (Proposer) has (\_\_\_\_\_) has not (\_\_\_\_\_) filed with the Joint Reporting Committee and annual compliance report on Standard Form 100 (EEO-1 Report).
4. The Bidder (proposer) does (\_\_\_\_\_) does not (\_\_\_\_\_) employ fifty (50) or more employees.

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

Dated: \_\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_

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**LETTER OF INTENT**  
**Disadvantaged Business Enterprise**  
*(This page shall be submitted for each DBE firm)*

Bidder/Offer Name: \_\_\_\_\_

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

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

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

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

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

DBE Contact Person: Name: \_\_\_\_\_ Phone: ( ) \_\_\_\_\_

DBE Certification Agency: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

*Each DBE Firm shall submit evidence (such as photocopy) of their certification status*

Classification:      ☐ Prime Contractor                      ☐ Subcontractor                      ☐ Joint Venture  
                                 ☐ Manufacturer                                      ☐ Supplier

Work items to be performed by DBE	Description	Quantity	Total

The bidder/offeror is committed to utilizing the above named DBE firm for the work described above. The estimated participation as follows:

DBE contract: \$ \_\_\_\_\_ Percent of total Bid: \_\_\_\_\_ %

**Affirmation**

The above-named DBE firm affirms that it will perform the portion of the contract for the estimated dollar value as stated above.

By: \_\_\_\_\_  
(Signature) (Title)

In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent Affirmation shall be null and void.

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**UTILIZATION STATEMENT  
Disadvantaged Business Enterprise**

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner.  
(Please check the appropriate box)

The bidder/offeror is committed to a minimum of \_\_\_\_\_% DBE utilization on this contract.

The bidder/offeror, while unable to meet the DBE goal of \_\_\_\_\_%, hereby commits to a minimum of \_\_\_\_\_% DBE utilization of this contract and also submits documentation, as an attachment demonstrating good faith efforts (GFE).

The undersigned hereby further assures that the information included herein is true and correct, and that the DBE firm(s) listed herein have agreed to perform a commercially useful function in the work items noted for each firm. The undersigned further understands that no changes to this statement may be made without prior approval from the Civil Rights Staff of the Federal Aviation Administration.

\_\_\_\_\_  
Bidders/Offeror's Firm Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**DBE UTILIZATION SUMMARY**

	<u>Bid Amount</u>	<u>DBE Amount</u>	<u>Contract Percentage</u>
DBE Prime Contractor	\$ _____ x 1.00=	\$ _____	_____ %
DBE Subcontractor	\$ _____ x 1.00=	\$ _____	_____ %
DBE Supplier	\$ _____ x 0.60=	\$ _____	_____ %
DBE Manufacturer	\$ _____ x 1.00=	\$ _____	_____ %
Total Amount DBE		\$ _____	_____ %
DBE Goal		\$ _____	_____ %

\*If the total proposed DBE participation is less than the established DBE goal, you must provide written documentation of the good faith efforts as required by 49 CFR Part 26.

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## **STATEMENT OF GOOD FAITH EFFORTS**

### **HANGAR 52 DEMOLITION**

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

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

This form is to be completed if bidder fails to achieve the DBE goals established for this project. The bidder is allowed to use an alternate method that demonstrates the good faith efforts made to meet the goals established as long as all of the requested information is included. Failure to include all requested information shall result in the bid being determined as nonresponsive to the DBE requirements.

The following list is not intended to be exclusive or exhaustive and the City will look not only at the different kinds of efforts the bidder has made, but also the quality, quantity, intensity and timeliness of those efforts. It is the responsibility of the bidder to exercise good faith efforts. Any act or omission by the City shall not relieve the bidder of this responsibility.

Criteria listed below are excerpted from Appendix A of 49 CFR93, as amended. A response is required to address each cited paragraph. Additional pages may be added as necessary.

1. **Attendance at Pre-Bid conference, if held:**

\_\_\_\_\_ Yes      \_\_\_\_\_ No      \_\_\_\_\_ Not Held

2. **Whether and when the bidder provided written notice to all certified DBE's listed on the Florida Department of Transportation's BizNet website that perform the type of work to be subcontracted and advising the DBE's of the specific work the bidder intend to subcontract; that their interest in the contract is being solicited; and how to obtain information for the review and inspection of contract plans and specifications.**

**All letters from bidders to prospective DBE subcontractors must be post marked or fax recorded a minimum of 12 calendar days prior to bid opening.**

- Provide complete list of all DBE's solicited.
- Provide **DATE** letters were mailed (DBE's will be canvassed as to who sent them letters and what date they were received.) Provide a copy of solicitation and all other letters sent to DBE's. Recommended information in your solicitation letter can include, but not limited to, the following:
  - Project specific information.
  - Your willingness to assist with supply purchases.
  - Bonding requirements of your firm.
  - Any assistance your firm will be giving regarding bonding requirements, lines of credit and insurance requirements.
  - Availability of specifications and plans through your office.
  - Best time to reach you by phone (DBE firms will be canvassed regarding your responsiveness to their calls and project information they received from your firm.)
  - Bid opening date and all addendum information.
  - Your requirements/time frames/payment schedules.

Attachment 3.A may be used to record the information required to show compliance with this section.

3. **Whether the bidder selected feasible portions of work to be performed by DBE's, including, where appropriate, breaking contracts or combining elements of work into feasible units. The ability of the bidder to perform the work with its own work force will not in itself excuse a contractor from making positive efforts to meet the established goals.**

If appropriate, detail any subcontracting category that you have broken down to assist DBE firms and list firms that have been made aware of this reduced scope.

<u>Subcontracting Category</u>	<u>DBE Firm</u>
_____	_____
_____	_____
_____	_____
_____	_____

4. **Whether the bidder considered all quotations received from DBE's and for those quotations not accepted, the bidder shall provide an explanation of why the DBE will not be used during the course of the contract. Receipt of lower quotation from non-DBE will not in itself excuse a bidder's failure to meet project goals.**

List all DBE firms who quoted this project; the amount quoted, and the successful subcontractor (if not the DBE firm) and their quote:

<u>Name of DBE</u>	<u>DBE's Quote</u> vs.	<u>Name of non-DBE Subcontractor Chosen</u>	<u>Subcontractor's Quote</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

5. **Whether the bidder provided interested DBE's assistance in reviewing the contract plans and specifications.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Name the DBE firms provided assistance and describe how your firm provided such assistance.**

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6. **Whether the bidder assisted interested DBE firms in obtaining required bonding, lines of credit or insurance if such assistance was necessary.**

If the project was above \$200,000 or exempt from the County's Bond Waiver Program, name the DBE's assisted and describe the assistance provided.

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7. **Whether the bidder advertised in general circulation, trade association, and/or minority/women - focus media concerning the subcontracting opportunities**

s.

List which papers carried your ad and attach a copy of the ad.

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8. **Whether the bidders followed up initial solicitations of interest by contacting DBE's to determine with certainty whether the DBE was interested.**

Name the DBE's you followed up with and describe your follow up efforts.

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9. **Whether the bidder negotiated in good faith with interested DBE's, not rejecting DBE's as unqualified without sound reasons based on a thorough investigation of their capabilities.**

- a) Provide a detailed statement of reasons why subcontracts were not entered into with a sufficient number of DBE's to meet the established goals.

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- b) Provide a list of DBE subcontractors you deemed unqualified and provide an explanation for the construction you reached.

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- c) For those DBE subcontractors contacted but determined to be unavailable, provide either:

- i) a signed letter to the bidder from the DBE stating they are unavailable;

**or**

- ii) a statement from the bidder that the DBE subcontractor refused to submit a letter after reasonable requests; and detailed statement from the Bidder of the reasons for the bidder's conclusion.

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10. **Whether the bidder effectively used the services of available minority/women community organizations; minority/women contractors' groups; local, state and federal minority/women business assistance offices; and other organizations that provide assistance in the recruitment and placement of minority/women business enterprises.**

**List minority/women organizations contacted.  
(A minimum of three organizations must be contacted.)**

<b>Organization</b>	<b>Person Contacted</b>	<b>Date Contacted</b>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>

11. **Whether the bidder has utilized DBE subcontractors on other County contracts within the past six months.**

List any local projects your firm has performed in the last six (6) months, the DBE subcontractors utilized and the dollar value of the DBE's subcontractor.

<b><u>Project Name</u></b>	<b><u>DBE Firms Used</u></b>	<b><u>Dollar Value</u></b>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>

12. **Describe any additional efforts or circumstances which may assist the City in Determining Good Faith Efforts.**

SWORN STATEMENT UNDER SECTION 287.133 (3)(A),  
FLORIDA STATUTES ON PUBLIC ENTITY CRIMES

**THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.**

1. This sworn statement is submitted with Bid, for **Hangar 52 Demolition** at the Space Coast Regional Airport, Titusville, Florida.
2. This sworn statement is submitted by \_\_\_\_\_ (name of entity submitting sworn statement) whose business address is \_\_\_\_\_, and (if applicable) its Federal Employer Identification Number (FEIN) is \_\_\_\_\_.
3. My name is \_\_\_\_\_ and my relationship to the entity named above is \_\_\_\_\_.
4. I understand that a "public entity crime" as defined in Paragraph 287.133 (1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133 (1)(b) Florida Statutes means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
6. I understand that an "affiliate" as defined in Paragraph 287.133 (1)(a), Florida Statutes means:
  1. A predecessor or successor of a person convicted of a public entity crime; or
  2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133 (l)(e), FLORIDA STATUTES, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business, with a public entity.

The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of any entity.

Based on information and belief; the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

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

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

\_\_\_\_ There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

\_\_\_\_ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

\_\_\_\_ The person or affiliate has not been placed on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

\_\_\_\_\_  
Signature Date

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

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

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

\_\_\_\_\_  
(Name of individual signing)

who, after first being sworn by me, affixed his/her signature in the space  
provided above on the \_\_\_\_\_ day of \_\_\_\_\_ 2011.

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

My Commission expires:

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## FLORIDA TRENCH SAFETY ACT CERTIFICATION AND DISCLOSURE STATEMENT

The undersigned acknowledges the requirements of the Florida Trench Safety Act., F.S., (Section 553.60 et. seq. Florida statutes), and hereby commits the Bidder to the following in the performance of the work in the event that the subject contract is awarded to and executed by said Bidder.

1. The Bidder further acknowledges that the Florida Trench Safety Act, (the Act) establishes the Federal excavation safety standards set forth at 29 CFR Part 1926, Subpart P as the Interim State Standard until such time as the State of Florida, through its Department of Labor and Employment Security, or any successor agency, adopts, updates or revises said interim standard. This State of Florida standard may be supplemented by special shoring requirements established by the State of Florida or any of its political subdivisions.
2. The Bidder, as Contractor, shall comply with all applicable excavation/trench safety standards.
3. The Contractor shall consider the geotechnical data available from the City, if any, the Contractor's own sources, and all other relevant information in providing the trench safety system to be employed on the subject Project. The Contractor acknowledges sole responsibility for the selection of the data on which he relies in providing the safety system, as well as for the system itself.
4. The amounts that the Bidder has set forth for pipe installation includes the following excavation / trench safety measures and the linear feet of trench excavated under each safety measure. These units, costs, and unit prices shall be disclosed solely for the purpose of compliance with procedural requirements of the Act. No adjustment to the Contract time or price shall be made for any difference in the actual number of linear feet of trench excavation, except as may be otherwise provided in these Contract Documents.

Trench Safety Measure (Description)	Units of Measure (LF, SF)	Unit (Quantity)	Unit Cost	Extended Cost
a. _____	_____	_____	_____	_____
b. _____	_____	_____	_____	_____
c. _____	_____	_____	_____	_____
d. _____	_____	_____	_____	_____
e. _____	_____	_____	_____	_____

For Information Only, Not for Payment Purposes \$

Bidder may use additional sheets as necessary to extend this form.

Failure to complete the above may result in the bid being declared non-responsive.

5. The amount disclosed is the cost of compliance with the applicable trench safety requirements does not constitute the extent of the Contractor's obligation to comply with said standards. Contractor shall expend additional sums at no additional cost to the County, if necessary, to comply with the Act (except as may otherwise be provided).
6. Acceptance of the bid to which this certification and disclosure applies in no way represents that the County or its representative has evaluated and thereby determined that the above costs are adequate to comply with the applicable trench safety requirements nor does it in any way relieve the Contractor of its sole responsibility to comply with the applicable trench safety requirements.

\_\_\_\_\_  
Company

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

Address:

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

Telephone: (\_\_\_\_) \_\_\_\_\_

**END OF FLORIDA TRENCH SAFETY ACT STATEMENT**

## **CERTIFICATION 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, or;
  - b) Installing manufactured products for which the 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 US domestic product
3. To furnish US 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% 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 the submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that support 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 US domestic products at or above the approved US 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% 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% US 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 US domestic source product exceeds the total project cost using non-domestic product by 25%. The required documentation for a type 4 of waiver is:

- a) Detailed cost information for total project using US 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

## **CERTIFICATION OF NON-SEGREGATED FACILITIES**

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

Certification - The information above is true and complete to the best of my knowledge and belief.

---

Name and Title of Signer (Print or Type)

---

Signature

---

Date

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

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## SAMPLE CONTRACT

THIS AGREEMENT made, and entered into as of the \_\_\_\_\_ day of \_\_\_\_\_, 2020, by and between the **TITUSVILLE-COCOA AIRPORT AUTHORITY**, hereinafter called the Owner, and \_\_\_\_\_, hereinafter called the Contractor.

WITNESSETH, that the said Contractor, for and in consideration of the payments hereinafter specified and agreed to be made by the Owner, hereby covenants and agrees to furnish and deliver all materials required, to do and perform all the work and labor, in a satisfactory and workmanlike manner, required to complete Contract entitled: **Hangar 52 Demolition** within the time specified, in strict and entire conformity with the Plans, Project Manual, and other Contract Documents, on file at the Office of the Executive Director, Titusville-Cocoa Airport Authority, Space Coast Regional Airport, 355 Golden Knights Boulevard, Titusville, Florida 32780, which are duly approved by the Owner and which said Plans, Project Manual and other Contract Documents are hereby made part of this Agreement as fully and with the same effects as if the same had been set forth at length in the body of this Agreement.

The Contractor agrees to make payment of all proper charges for labor and materials required in the aforementioned work, and to defend, indemnify and save harmless the Owner and all its officers and agents against and from all suits and costs of every kind and description, and from all damages to which the said Owner or any of their officers, agents or servants may be put, by reason of injury or death to persons or injury to property of others resulting from the performance of said work, or through the negligence of the Contractor, or through any improper or defective machinery, implements or appliances used by the Contractor in the aforesaid work, or through any act of omission on the part of the Contractor, or his agent or agents, employees or servants.

In consideration of the premises, the Owner hereby agrees to pay to the Contractor for the said work, when fully completed, the total amount of \_\_\_\_\_ **Dollars (\$ \_\_\_\_\_)**, (the said sum being the Contractor's accepted Bid as shown on his Proposal, a copy of which is a part of the Contract Documents), subject to such additions and deductions as may be provided for in the Contract Documents. In the event the Proposal contains multiple bid items, it is understood that the amount to be paid shall be the total based on the unit prices, together with lump sum bid prices, contained in said Proposal, for the work actually completed.

Upon final acceptance and delivery of the Equipment, Owner shall pay the Contract Price.

In Witness Whereof, the parties hereto have caused this Contract to be executed by their appropriate officials, as of the date first above written.

OWNER:

**TITUSVILLE-COCOA AIRPORT AUTHORITY**

By: \_\_\_\_\_  
Michael Powell, C.M., ACE  
Chief Executive Officer

Witnesses:

ATTEST:

\_\_\_\_\_  
As to Party of the First Part

By: \_\_\_\_\_  
(SEAL)

CONTRACTOR:

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

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

Witnesses:

\_\_\_\_\_

ATTEST: \_\_\_\_\_  
As to Party of the Second Part

Secretary  
(CORPORATE SEAL)



# **FAA GENERAL PROVISIONS**

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### **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:

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
<b>10-01</b>	<b>AASHTO</b>	The American Association of State Highway and Transportation Officials.
<b>10-02</b>	<b>Access Road</b>	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
<b>10-03</b>	<b>Advertisement</b>	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
<b>10-04</b>	<b>Airport</b>	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.
<b>10-05</b>	<b>Airport Improvement Program (AIP)</b>	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
<b>10-06</b>	<b>Air Operations Area (AOA)</b>	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.
<b>10-07</b>	<b>Apron</b>	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
<b>10-08</b>	<b>ASTM International (ASTM)</b>	Formerly known as the American Society for Testing and Materials (ASTM).
<b>10-09</b>	<b>Award</b>	The Owner's notice to the successful bidder of the acceptance of the submitted bid.

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
<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

Paragraph Number	Term	Definition
		agreement, but which is found by the Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	FAA	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	Federal Specifications	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
10-30	Force Account	<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>
10-31	Intention of Terms	<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>
10-32	Lighting	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

Paragraph Number	Term	Definition
		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>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 <b>TCAA</b> .
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

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
		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 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>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
<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 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

Paragraph Number	Term	Definition
		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.
10-60	Surety	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	Taxilane	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	Taxiway	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.
10-63	Taxiway/Taxilane Safety Area (TSA)	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
10-64	Work	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.
10-65	Working day	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.
10-66	Owner Defined terms	[ None ]

**END OF SECTION 10**

## **Section 20 Proposal Requirements and Conditions**

### **20-01 Advertisement (Notice to Bidders).**

**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*.

**Mobilization is limited to 10 percent of the total project cost.**

**A prebid 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.**

**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.

**Boring logs and other records of subsurface investigations and tests are available for inspection of bidders.** It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the Owner's design and estimating purposes only. Such information has been made available for the convenience of all bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which the bidder may make or obtain from their own examination of the boring logs and other records of subsurface investigations and tests that are furnished by the Owner.

**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 **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 **3** 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 **30** 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.**

**50-05 Cooperation of Contractor.** The Contractor shall be supplied with **five** hard copies 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 **mutually agreed upon by Contractor and the Engineer.**

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.

**50-17 Value Engineering Cost Proposal.**

**The provisions of this paragraph will apply only to contracts awarded to the lowest bidder pursuant to competitive bidding.**

**On projects with original contract amounts in excess of \$100,000, the Contractor may submit to the RPR, in writing, proposals for modifying the plans, specifications or other requirements of the contract for the sole purpose of reducing the cost of construction. The value engineering cost proposal shall not impair, in any manner, the essential functions or characteristics of the project, including but not limited to service life, economy of operation, ease of maintenance, desired appearance, design and safety standards. This provision shall not apply unless the proposal submitted is specifically identified by the Contractor as being presented for consideration as a value engineering proposal.**

**Not eligible for value engineering cost proposals are changes in the basic design of a pavement type, runway and taxiway lighting, visual aids, hydraulic capacity of drainage facilities, or changes in grade or alignment that reduce the geometric standards of the project.**

**As a minimum, the following information shall be submitted by the Contractor with each proposal:**

- a. A description of both existing contract requirements for performing the work and the proposed changes, with a discussion of the comparative advantages and disadvantages of each.**
- b. An itemization of the contract requirements that must be changed if the proposal is adopted.**
- c. A detailed estimate of the cost of performing the work under the existing contract and under the proposed changes.**
- d. A statement of the time by which a change order adopting the proposal must be issued.**
- e. A statement of the effect adoption of the proposal will have on the time for completion of the contract.**
- f. The contract items of work affected by the proposed changes, including any quantity variation attributable to them.**

**The Contractor may withdraw, in whole or in part, any value engineering cost proposal not accepted by the RPR, within the period specified in the proposal. The provisions of this subsection shall not be construed to require the RPR to consider any value engineering cost proposal that may be submitted.**

**The Contractor shall continue to perform the work in accordance with the requirements of the contract until a change order incorporating the value engineering cost proposal has been issued. If a change order has not been issued by the date upon which the Contractor's value engineering cost proposal specifies that a decision should be made, or such other date as the Contractor may subsequently have requested in writing, such value engineering cost proposal shall be deemed rejected.**

The RPR shall be the sole judge of the acceptability of a value engineering cost proposal and of the estimated net savings from the adoption of all or any part of such proposal. In determining the estimated net savings, the RPR may disregard the contract bid prices if, in the RPR's judgment such prices do not represent a fair measure of the value of the work to be performed or deleted.

The Owner may require the Contractor to share in the Owner's costs of investigating a value engineering cost proposal submitted by the Contractor as a condition of considering such proposal. Where such a condition is imposed, the Contractor shall acknowledge acceptance of it in writing. Such acceptance shall constitute full authority for the Owner to deduct the cost of investigating a value engineering cost proposal from amounts payable to the Contractor under the contract.

If the Contractor's value engineering cost proposal is accepted in whole or in part, such acceptance will be by a contract change order that shall specifically state that it is executed pursuant to this paragraph. Such change order shall incorporate the changes in the plans and specifications which are necessary to permit the value engineering cost proposal or such part of it as has been accepted and shall include any conditions upon which the RPR's approval is based. The change order shall also set forth the estimated net savings attributable to the value engineering cost proposal. The net savings shall be determined as the difference in costs between the original contract costs for the involved work items and the costs occurring as a result of the proposed change. The change order shall also establish the net savings agreed upon and shall provide for adjustment in the contract price that will divide the net savings equally between the Contractor and the Owner.

The Contractor's 50% share of the net savings shall constitute full compensation to the Contractor for the value engineering cost proposal and the performance of the work.

Acceptance of the value engineering cost proposal and performance of the work shall not extend the time of completion of the contract unless specifically provided for in the contract change order.

#### **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.

**The Contractor shall employ a Quality Control (QC) testing organization to perform all Contractor required QC tests in accordance with Item C-100 Contractor Quality Control Program (CQCP).**

**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.** [ The Contractor shall provide dedicated space for the use of the engineer, RPR, and inspectors, as a field office for the duration of the project. This space shall be located conveniently near the construction and shall be separate from any space used by the Contractor. The Contractor shall~~

~~furnish water, sanitary facilities, heat, air conditioning, and electricity. } 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:

- **Owner**
- **Location**
- **Person of Contact**

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) **as appropriate** of the project plans.

**70-09 Use of explosives.** When the use of explosives is necessary for the execution of the work, the Contractor shall exercise the utmost care not to endanger life or property, including new work. The Contractor shall be responsible for all damage resulting from the use of explosives.

All explosives shall be stored in a secure manner in compliance with all laws and ordinances, and all such storage places shall be clearly marked. Where no local laws or ordinances apply, storage shall be provided satisfactory to the RPR and, in general, not closer than 1,000 feet (300 m) from the work or from any building, road, or other place of human occupancy.

The Contractor shall notify each property Owner and public utility company having structures or facilities in proximity to the site of the work of their intention to use explosives. Such notice shall be given sufficiently in advance to enable them to take such steps as they may deem necessary to protect their property from injury.

The use of electrical blasting caps shall not be permitted on or within 1,000 feet (300 m) of the airport property.



**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.

**None are anticipated in work area.**

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.

~~[ 70-15.1 FAA facilities and cable runs. The Contractor is hereby advised that the construction limits of the project include existing~~

~~facilities and buried cable runs that are owned, operated and maintained by the FAA. The Contractor, during the execution of the project work, shall comply with the following:~~

~~a. The Contractor shall permit FAA maintenance personnel the right of access to the project work site for purposes of inspecting and maintaining all existing FAA owned facilities.~~

~~b. The Contractor shall provide notice to the FAA Air Traffic Organization (ATO)/Technical Operations/System Support Center (SSC) Point-of-Contact through the airport [ Owner ] [ operator ] [ manager ] [ ] a minimum of seven (7) calendar days prior to commencement of construction activities in order to permit sufficient time to locate and mark existing buried cables and to schedule any required facility outages.~~

~~c. If execution of the project work requires a facility outage, the Contractor shall contact the FAA Point-of-Contact a minimum of 72 hours prior to the time of the required outage.~~

~~d. Any damage to FAA cables, access roads, or FAA facilities during construction caused by the Contractor's equipment or personnel whether by negligence or accident will require the Contractor to repair or replace the damaged cables, access road, or FAA facilities to FAA requirements. The Contractor shall not bear the cost to repair damage to underground facilities or utilities improperly located by the FAA.~~

~~e. If the project work requires the cutting or splicing of FAA owned cables, the FAA Point-of-Contact shall be contacted a minimum of 72 hours prior to the time the cable work commences. The FAA reserves the right to have a FAA representative on site to observe the splicing of the cables as a condition of acceptance. All cable splices are to be accomplished in accordance with FAA specifications and require approval by the FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is hereby advised that FAA restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA, the Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.~~

**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.

**See SWPP plan.**

**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.**

The limits of liability for the insurance required by, Paragraph 70-11.a shall provide coverage for not less than the following amounts or greater where required by law:

(1) Workers' Compensation, etc.:

(a) State:

Statutory

(b) Applicable Federal

Statutory

(e.g. Longshoreman's)

(c) Employer's Liability \$1,000,000

(2) Comprehensive General Liability:

(a) Bodily Injury and Property Damage:

\$1,000,000 Combined Single Limit  
(Per Occurrence)

(b) The Contractor's General Liability insurance shall provide coverage for the following: (1) Premises - Operations, (2) Independent Contractors, (3) Products/Completed Operations Hazard, (4) Underground Hazard, (5) Broad Form Property Damage, (6) Where applicable, Explosion and Collapse Hazard, and (7) Personal Injury.

The Owner, its officials and staff; and The Engineer, its staff and consultants shall be named as additional insureds by endorsement to the policy.

(3) Comprehensive Automobile Liability:

(a) Bodily Injury and Property Damage:

\$1,000,000 Combined Single Limit  
(Per Occurrence)

(b) The Contractor's Comprehensive Automobile Liability Insurance shall provide coverage for Bodily Injury and Property Damage Per Occurrence for owned, hired and non-owned vehicles.

d. The Contractor shall obtain in the name of the Owner, Owner's Protective Liability Insurance which will have the same limits of coverage for the same period as that required in paragraph 70-11.c(2) above for the Contractor's general liability coverage, including liability for acts of Subcontractors and Subordinate Contractors.

e. Contractor shall purchase and maintain such Protective and Contractual Bodily Injury Liability Insurance and such Protective and Contractual Property Damage Liability Insurance as shall be required by any public bodies or utility companies whose property, facilities, or right-of-way may be affected by the Work to be done under this Contract.

f. Contractor will provide such additional information in respect of insurance provided by him as the Owner may reasonably request. Failure by Owner to give any such notice of objection within the time provided shall constitute an acceptance of such insurance purchased by Contractor as complying with the Contract Documents.

g. Certificates in triplicate from the insurance carrier stating the limits of liability and expiration date shall be filed with Owner before operations are begun. Certificates shall not merely name the types of policy provided but shall specifically refer to this Contract and shall contain a separate express statement of compliance with each of the requirements as set forth in this subsection. The certificates shall, in addition to the information relative to the insurance required, contain the following:

- (1) Inception and expiration dates of insurance policy.
- (2) Limits of liability provided (Public Liability and Property Damage).
- (3) Coverage provided, including special hazards if required.
- (4) Name of insurance company.
- (5) Policy Number.
- (6) Additional insureds' interests covered.
- (7) Statement that the Explosion, Collapse, and Underground exclusions do not apply.
- (8) Certificate shall reflect self-insured retention applicable to any contract of insurance.
- (9) Excess liability certified contracts must state underlying insurance requirements.
- (10) Project number and nature of work.

No certificate will be accepted which exculpates the issuer or reduces any rights conferred on the Owner by the above certificates, nor will they be accepted unless the certificates bear a live signature of a direct representative of a company authorized to do business in the state where the work is located.

No certificate will be accepted unless the person signing the certificate certifies, in a separate letter, his exact relationship with the insurance carrier or carriers indicated in the certificate.

In addition to the required certificates, Contractor will file with the Owner prior to commencement of the work original endorsements, or copies of any blanket endorsement in the Contractor's GCL policy, confirming the status of the Owner and Engineer, their agents and employees, as additional insureds, both as to premises operations coverage and completed operations.

The Owner may, at his discretion, modify or waive any of the foregoing requirements.

No contract of insurance containing a "claims made" insuring agreement will be acceptable.

**END OF SECTION 70**



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**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 **50** 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 **14** 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 **7 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 **once** 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 on **CSPP**

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:

**80-07.1 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	Allowed Construction Time
	\$200/day plus additional RPR costs	

The maximum construction time allowed for Schedules [ ] will be the sum of the time allowed for individual schedules but not more than [ ] days. 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.

**0-09 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.

Term	Description
<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 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>	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.



Term	Description
	<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> <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.

~~The Owner has three options in determining whether retainage will be withheld on the project. The Owner must insert the clauses for the option that applies and delete the clauses for the other two options. Proper use of this language assists with meeting the requirements of 49 CFR § 26.29.~~

~~*Option 1:* The Owner may decline to hold retainage from prime Contractors and prohibit prime Contractors from holding retainage from subcontractors. Insert this clause if Option 1 is selected:~~

- ~~a. Retainage will not be withheld on this project. No retainage will be withheld by the Owner from progress payments due the prime Contractor. Retainage by the prime or subcontractors is prohibited, and no retainage will be held by the prime from progress due subcontractors.~~
- ~~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. 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 project 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.~~

~~*Option 2:* The Owner may decline to hold retainage from prime Contractors and require a contract clause obligating prime Contractors to make prompt and full payment of any retainage kept by prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. Insert this clause if Option 2 is selected:~~

- ~~a. No retainage will be held by the Owner from progress payments due the prime.~~
- ~~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 project 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.~~

***Option 3:*** The Owner may hold retainage from prime Contractors and provide for prompt and regular incremental acceptances of portions of the prime contract, pay retainage to prime Contractors based on these acceptances, and require a contract clause obligating the prime Contractor to pay all retainage owed to the subcontractor for satisfactory completion of the accepted work within 30 days after the Owner's payment to the prime Contractor. If Option 3 is selected, the percent withheld may range from 0% to 10% but in no case may it exceed 10%. When establishing a suitable retainage value that protects the Owner's interests, give consideration that the performance and payment bonds also provide similar protection of Owner interests. Owner may elect to incrementally release retainage if owner is satisfied its interest with completion of the project are protected in an adequate manner. If Option 3 is selected, insert the following clause and specify a suitable value where indicated:

- 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 **30** 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**

## **GENERAL REQUIREMENTS**

**1030-1.1 Introduction:** This project will include Contractor operations within or near active Air Operations Areas (AOA). The Airport will conduct normal aircraft operations during the course of this project, subject to certain restrictions called out in this section, elsewhere in the specifications, or in the plans. Therefore, to provide for the security and safety of Airport users and the Contractor's forces, as well as to minimize interruptions to aircraft operations, the Contractor shall limit his work within the areas designated and conduct his operations as specified. Contractor shall follow the Construction Safety and Phasing Plan (CSPP).

**1030-1.2** The safety of the Airport patrons and personnel and of the Contractor's personnel is paramount throughout construction. Except where stricter requirements are indicated, the Contractor shall follow the safety guidelines referenced in the Federal Aviation Administration (FAA) [www.faa.gov] Advisory Circular (AC) No. 150/5370-2, latest edition, "Operational Safety on Airports During Construction".

**1030-1.3** Any fines or assessments levied against the Sponsor as a result of unauthorized intrusions in the AOA or other violations by the Contractor's personnel or those of his subcontractors will be passed on to the Contractor. In addition, the Contractor will be subject to a fine of \$1,000.00 per incident, assessed by the Sponsor.

### **1030-1.4 Air Operations Area (AOA) Safety Requirements:**

- A. Barricades:** Existing runways, taxiways and aprons outside the limits of construction shall be separated from construction areas with barricades as shown on the plans.
- B. Runway and Taxiway Closures:** Only the Owner will make Closures of runways and taxiways. The Owner shall contact the appropriate FAA Flight Service Station prior to issuing the Notice-to-Proceed so that a Notice-to-Airmen (NOTAM) for runway or taxiway closure can be issued in accordance with established criteria. Construction operations within the runway or taxiway safety zone shall not begin until the Contractor receives clearance from the Owner and Engineer assuring that the adjoining runway or taxiway has been closed.
- C. Navigational Aid Equipment:** The project will be phased to permit work outside of and around certain FAA navigational aid (NAVAID) equipment such as approach light systems, localizer antenna, glide slope antenna, RVR projectors, middle and inner markers, etc. The Contractor shall notify the Engineer at least 7 days prior to disassembling or working around any NAVAID equipment so that a NOTAM can be issued indicating that the affected NAVAID will be impacted.

### **1030-1.5 Construction Safety Requirements:**

#### **A. General:**

- 1. Safety Officer:** The Contractor is required to employ a Safety Officer who will be the liaison between the Contractor, the Engineer and the Owner in all safety related matters for the duration of the project. The Safety Officer shall be on call 24 hours per day for emergency maintenance of airport hazard lighting, barricades, and other safety features.
- 2. Protection of Utilities:** The Contractor shall be responsible for field marking and protecting all utilities within the construction limits.
- 3. Storage of Equipment, Vehicles, and Materials:** All equipment, vehicles, and materials must be stored in the designated storage or staging area or in areas acceptable to the Engineer.



- 4. Vehicular Markings:** Contractor vehicles and equipment shall be marked with checkered flags and lighted with flashing beacons to comply with requirements of FAA AC 150/5210-5, latest edition, "Painting, Marking, and Lighting of Vehicles Used on an Airport". All vehicles and equipment shall display 3' x 3' flags, orange and white "checkerboard" pattern, with the squares being 1' x 1' each. All vehicles and construction equipment working during the night shall be equipped with an amber colored rotating beacon light.

**5. Construction Methods Limitation:**

- a. No open flames or burning will be allowed on Airport property except as specifically authorized by the Engineer in writing.
- b. Stockpiled material shall be constrained in a manner to prevent displacement by jet blast, prop blast, or wind, and shall be kept to a height that will not penetrate FAR Part 77 imaginary air space.

**6. Safety and Accident Protection:**

- a. The Contractor shall comply with all applicable federal, state, and local laws, ordinances, and regulations governing safety, health, and sanitation; shall provide barricades; and shall take any other needed actions, on his own responsibility, that are reasonably necessary to protect the life and health of employees on the job, the safety of airport users, the safety of moving and parked aircraft, and other property during the performance of the work.
- b. The Safety Officer's duties shall include accident prevention.

- 7. Navigational Aids:** Airport navigational aid critical areas are shown on the drawings or will be indicated by the Engineer. The Contractor shall not enter these areas without the Engineer's approval.

- 8. FAA Advisory Circular:** Except as otherwise specified, FAA AC 150/5370-2, latest edition, and all its references shall be used in maintaining airport operational safety during construction. The Contractor shall obtain a copy of this Advisory Circular from FAA.

**B. Runway and Taxiway Safety Zones:**

- 1. Limitations:** When necessary to accomplish construction in areas adjacent to runways and taxiways, the construction equipment, vehicles, and men are authorized to operate without interruption within the project limits only, except within the following areas and as specified otherwise:

- a. Distance from runway centerline or runway end: **Within 250 feet**
- b. Distance from active taxiway centerline: **Within 70 feet**
- c. Runway approach areas: Runway approach areas are restricted areas.

- 2. Request for Facility Closures:** Construction activities on runways or taxiways or within the above-restricted areas shall only be performed at times when the runway or taxiways are closed to aircraft. The Contractor through the Engineer thereof must request closure of a runway or taxiway or any portion in writing. This request must indicate the areas needed and a schedule of operations and time(s) required for operations within the area. The Owner reserves the right, however, to shift any approved closure periods to alleviate aircraft congestion or when inclement weather conditions dictate.

- 3. Equipment Operation Restrictions:** Contractor may be permitted to operate trenching machines and other equipment in the Runway and Taxiway Safety Zones provided all of the following conditions are satisfied:

- a. The operations have been approved by FAA ATC and Owner.
- b. The equipment operator and/or crew foreman monitors the ATC ground frequency continuously, using a two-way radio transceiver.
- c. All equipment shall be cleared from the Runway or Taxiway Safety Zones during aircraft operations (landings, take-offs, and taxiing).
- d. All equipment within the Runway and Taxiway Safety Zones is manned and being used. No unnecessary or parked equipment will be allowed within the Runway and Taxiway Safety Zones.
- e. All excavated trenches and holes shall be backfilled, tamped and leveled to match existing grades before workmen leave the site at the end of each workday.

**4. Stockpiles:** Stockpiled materials shall not be permitted within the runway or taxiway safety zones.

**5. Grading Requirements:** All construction within a restricted area shall be performed in such a manner that, at the end of the closure period, it will leave the safety area with no abrupt grade changes or grades in excess of 5 percent, and with no trenches with depth or width greater than 3 inches.

**C. Obstructions to Navigation:**

1. **Violation of Safety Zone Surfaces:** Penetration of equipment, vehicles, materials, or men into the safety zones and approach surfaces requires the preparation and distribution of Notices to Airmen (NOTAM) in advance to the actual penetration.
2. **Scheduling:** When part of the work in this project is in violation of FAR Part 77, the clearance distance requirements from runway and taxiway edges shall be incorporated into the construction sequence schedule. At no time shall the construction limits of the area under construction violate the safety zones without prior notification to and approval by the Engineer.
3. **Coordination and Communication:** Work within and adjacent to active AOAs shall be coordinated with the Engineer prior to commencement of the activity. The construction superintendent and the resident inspector, both of which shall be in constant radio contact with ATC, shall accompany work crews in these areas.

**1030-1.6 Safety Planning:** The Contractor shall integrate and maintain requirements of airport operational safety into each planning and work schedule. The Contractor's Safety Officer shall continuously monitor all planning schedules and work underway for compliance to AC 150/5370-2, Latest Edition; and shall maintain vigilance to detect areas needing attention due to oversight or altered construction activities. Airport operational safety during construction will be on the agenda at the preconstruction conference and each coordination and progress meeting.

**1030-1.7 Security Requirements:** The Contractor has the responsibility for maintaining control of the access gates or any other entrance to the AOA. The Contractor may utilize a gate guard or install an automatic operated gate controller with limited access with numeric keypad. The Contractor may be required to erect temporary fencing to protect the AOA during construction. The Contractor's method of maintaining security shall be set forth in his Security Plan and shall comply with the airport's rules and regulations concerning work in the airport restricted areas. There will be no separate measurement or payment for gate guards or temporary fencing required maintaining the integrity of the AOA.

**1030-1.8 Barricades:** Contractor shall provide barricades along active taxiway pavement areas and elsewhere as shown on the plans or directed by the Engineer while work is proceeding in the taxiway and apron areas. Barricades shall be sited and relocated during the course of the work to clearly identify areas closed to aircraft operations.

## PRODUCTS

### 1030-2.1 Barricades:

Low Profile Barricades: Shall meet the requirements as shown on the plans.

Vehicle Barricades: Shall meet the requirements of FDOT Index 600 Type III.

## EXECUTION

**1030-3.1 Limitation of Closures:** Only the Owner will make Airfield pavement closures. The Contractor shall request the closure through the Engineer.

**1030-3.2 Barricade Installation:** Install barricades at locations shown on the drawings and/or where directed by Engineer and/or Airport Operations. Anchor barricades as specified in the plans and specifications. Maintain barricades until removal is directed by Engineer and/or Airport Operations. Barricade batteries shall be checked daily to insure adequate operation of the flashers during the night. Replace batteries as required. Upon removal of barricades repair any damage to pavement or surrounding area caused by barricades.

**1030-3.3 Measurement and Payment:** All costs associated with compliance with the requirements of the Construction Safety and Phasing Plan (CSPP), preparation of the Safety Plan Compliance Document (SPCD), barricades, air traffic coordination and ground control communications, security, and safety shall be paid under the lump sum payment for "Maintenance of Air Operations". This shall be deemed full compensation for providing all labor, materials, maintenance, batteries, sandbags, and incidental equipment. It shall also be compensation for the removal, repair, and reuse of the barricades and markers as shown on the plans.

- A. All work covered by this section will be paid for at the contract lump sum price for "Maintenance of Air Operations".
- B. Partial payments for the item of "Maintenance of Air Operations" will be made with the first and second partial pay estimates paid on the contract, and will be made at the rate of 50 percent of the lump sum price for "Maintenance of Air Operations" on each of these partial pay estimates, less the retainage provided for in the Contract, provided the amount bid for "Maintenance of Air Operations" does not exceed 5 percent of the total amount bid for the base bid contract.
- C. If the amount bid for the item of "Maintenance of Air Operations" exceeds 5 percent of the total amount, the total lump sum bid amount will be paid equally in the first, second, third, and fourth progress payments. All such payments will be made less the retainage provided for in the Contract.
- D. Payment will be made under:
  - 1. 01030-1 Maintenance of Air Operations – per Lump Sum

**END OF SECTION 01030**

## PART 2 - SECTION 01090 - REGULATIONS AND DEFINITIONS

### PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS: Drawings, General Provisions, Supplementary Conditions, Specifications, and other contract documents apply to work of this section.
- 1.2 DESCRIPTION OF REQUIREMENTS:
  - A. General: This section specifies procedural and administrative requirements for compliance with governing regulations, codes and standards imposed upon the work. These requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes and standards.
  - B. The term "Regulations" is defined to include laws, statutes, ordinances and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the work regardless of whether they are lawfully imposed by governing authority or not.
  - C. Governing Regulations: Refer to General Provisions, Supplementary Conditions, and General Requirements for requirements related to compliance with governing regulations.
- 1.3 DEFINITIONS:
  - A. General Explanation: Certain terms used in contract documents are defined in this article. Definitions and explanations contained in this section are not necessarily complete, but are general for the work to the extent that they are not stated more explicitly in another element of the contract documents.
  - B. General Requirements: Provisions and requirements of Division 1 sections apply to the entire work of the contract and, where so indicated, to other elements which are included in the project.
  - C. Indicated: The term "indicated" is a cross-reference to graphic representations, notes or schedules on the drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in contract documents. Where terms such as "shown", "noted", "scheduled", and "specified" are in lieu of "indicated", it is for the purpose of helping the reader locate the cross-reference, and no limitation of locations is intended except as specifically noted.
  - D. Directed, Requested, etc.: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted" mean "directed by the Engineer", "requested by the Engineer", and similar phrases. However, no such implied meaning will be interpreted to extend the Engineer's responsibility into the Contractor's area of construction supervision.

- E. Approved: Where used in conjunction with the Engineer's response to submittals, requests, applications, inquiries, reports and claims by the Contractor, the term "approved" will be held to limitations of the Engineer's responsibilities and duties as specified in General Provisions and Supplementary Conditions. In no case will the Engineer's approval be interpreted as a release of the Contractor from responsibilities to fulfill requirements of contract documents or acceptance of the work, unless otherwise provided by requirements of the contract documents.
  - F. Project Site: The term "project site" means the space available to the Contractor for performance of the work, either exclusively or in conjunction with others performing other construction as part of the project. The extent of the project site is shown on the drawings.
  - G. Furnish: The term "furnish" is used to mean "supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations."
  - H. Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations."
  - I. Provide: The term "provides" means "to furnish and install, complete and ready for the intended use."
  - J. Installer: The "installer" is the "the entity" (person or firm) engaged by the Contractor, its subcontractor or sub-subcontractor for performance of a particular element of construction at the project site, including installation, erection, application and similar required operations. It is a requirement that installers are experienced in the operations they are engaged to perform.
- 1.4 SUBMITTALS: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

PRODUCTS (Not Applicable)

EXECUTION (Not Applicable)

END OF SECTION 01090

PART 2 - SECTION 01100 - SUMMARY

PART 3 - GENERAL

3.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

3.2 SUMMARY

- A. This Section includes the following:
1. Project information.
  2. Work covered by Contract Documents.
  3. Work under separate contracts.
  4. Owner-furnished products
  5. Use of premises.
  6. Coordination with occupants.
  7. Work restrictions.
  8. Specification and drawing conventions.
- B. Related Sections include the following:
1. Division 1 Section "Airport Project Work Procedures" for limitations and procedures governing work on the Airport.

3.3 PROJECT INFORMATION

- A. Project Identification: **Hangar 52 Demolition**

1. Project Location: SPACE COAST REGIONAL AIRPORT  
355 Golden Knights BLVD  
Titusville, FL 32780

- B. Owner: Titusville-Cocoa Airport Authority  
MERRITT ISLAND AIRPORT

Engineer: Michael Baker International  
Bruno Chiappe, P.E.  
12740 Gran Bay Parkway West, Suite 2110  
Jacksonville, Florida 32258  
Phone: (904) 380-2500 Fax: (904) 380-2501  
Florida License Number 84706

John Neff, P.E.  
515 North Flagler Drive, Suite 303  
West Palm Beach, Florida 33401  
Phone: (561) 812-6403 Cel: (954)295-8031  
Florida License Number XXXXXX

### 3.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and generally consists of the following:

1. The construction work includes furnishing labor, materials, and equipment in accordance with the project plans and specifications. Work includes the demolition of an existing timber wall, coordination of utility relocation with local utility agencies, construction of a new concrete noise wall with augered cast-in-place foundations, embankment, and other associated work to ensure a completed project.

The scope of work shall also include; coordination with the Airport, protection of the all existing facilities, equipment, and utilities to remain, and maintaining access to existing parking areas.

The Contractor will be responsible for field verifying the dimensions and verifying the background drawings are accurate. The Airport can provide a reference copy of the Cad drawings in electronic form; however the Contractor will be solely responsible for the accuracy of the drawings, and any updating of the background drawings provided. The Contractor shall be required to acknowledge this in the form of a signed release prior to transfer of the Cad Files.

- B. Type of Contract:

1. Project will be constructed under a single prime contract.

### 3.5 WORK UNDER SEPARATE CONTRACTS

- A. General: When applicable cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.
- B. Concurrent Work – Owner Performed: Owner will perform work using his own forces for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.
1. Miscellaneous property maintenance or facility upgrades, to be determined, outside of the project work area.

### 3.6 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations as indicated on Construction Drawings.
- B. Use of Site: Limit use of premises to work in areas indicated on the drawings. Do not disturb portions of Project site beyond areas in which the Work is indicated.
1. Owner Occupancy: Allow for Owner occupancy of Project site.

2. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - a. Schedule deliveries to minimize use of roads, and driveways, and of security gates and entrances.
  - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
  - c. Owner will not accept deliveries. The Contractor shall have a representative on site for taking Contractor's deliveries.

### 3.7 OWNER-FURNISHED PRODUCTS

- A. Owner will furnish products as indicated on the Drawings, or as specified.

### 3.8 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.
  1. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
  2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
    - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PRODUCTS (Not Used)

EXECUTION (Not Used)

END OF SECTION 01100



PART 4 - SECTION 01110 STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY  
CONSTRUCTION CONTRACT SPECIFICATIONS

PART 1 – GENERAL

1.1 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).

1.2 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.

1.3 If the contractor is participating (pursuant to 41 CFR 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.

1.4 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.

- 1.5 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.
- 1.6 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.
- 1.7 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.
- 18 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.
- 1.9 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.
- 1.10 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.
- 1.11 The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
- 1.12 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.
- 1.13 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 60-4.8.

- 1.14 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.
- 1.15 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).

END SECTION 01110

PART 5 - SECTION 01135 – WEATHER DELAYS

PART 6 - GENERAL

6.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

6.2 EXTENSIONS OF CONTRACT TIME:

- A. If the basis exists for an extension of time in accordance with General Conditions, Article 8, an extension of time on the basis of weather may be granted only for the number of Weather Delay Days in excess of the number of days listed as the Standard Baseline for the entire construction duration of each phase as a whole.

6.3 STANDARD BASELINE FOR AVERAGE CLIMATIC RANGE:

- A. The Owner has reviewed weather data available from the National Oceanic and Atmospheric Administration (NOAA) and determined a Standard Baseline of average climatic range for the Merritt Island Airport (COI).
- B. Standard Baseline shall be regarded as the normal and anticipatory number of calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of precipitation in excess of one-tenth inch (0.10") liquid measure. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time.
- C. Standard Baseline (based upon precipitation in excess of one-tenth inch (0.10") liquid measure) established for this contract is as follows:

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
3	5	4	9	4	4	5	7	6	6	4	6

The Contractor shall include, at a minimal, the above noted rain days within the construction schedule.

6.4 ADVERSE WEATHER AND WEATHER DELAY DAYS:

- A. Adverse Weather is defined as the occurrence of one or more of the following conditions which prevents exterior construction activity or access to the site within twenty-four (24) hours:
1. precipitation (rain, snow, or ice) in excess of one-tenth inch (0.10") liquid measure;
  2. temperatures which do not rise above 32 degrees F by 10:00 a.m.;
  3. temperatures which do not rise above that specified for the day's construction activity by 10:00 a.m., if any is specified;
  4. sustained wind in excess of twenty-five (25) m.p.h.;

5. any day that the Owner has requested no work to be performed.

- B. A Weather Delay Day may be counted if adverse weather prevents work on the project for fifty percent (50%) or more of the Contractor's scheduled work day, including a weekend day or holiday if Contractor has scheduled construction activity that day.

Adverse Weather may include "dry-out" or "mud" days, as determined by the Engineer such as:

1. For rain days above the standard baseline.
  2. Only if there is a hindrance to site access or sitework, such as excavation, embankment, backfill, footings, etc. (see 4. & 5. below).
  3. At a rate no greater than one (1) make-up day for each day or consecutive days of rain beyond the standard baseline that total 0.1 inch or more, liquid measure, if no substantial work is possible (see 4. & 5. below), unless specifically recommended otherwise by the Construction Manager/Engineer.
  4. If the Contractor's activity is limited to approximately 50% of the Contractor's activity before the Adverse Weather occurrence, then one-half ( $\frac{1}{2}$ ) a weather delay day will be counted. For example if the Contractor is disk ing excavation and embankment areas to dry in situ moisture in the soils or hauling and placing unclassified excavation or borrow material to the embankment before an Adverse Weather occurrence, but is able to continue disk ing excavation and embankment areas or placing unclassified excavation or borrow material, one-half ( $\frac{1}{2}$ ) a Weather Delay Day will be allowed.
  5. If the Contractor's activity is limited to minor activity when compared to the Contractor's activity before the Adverse Weather occurrence, then one (1) weather delay day will be counted. For example if the Contractor is disk ing excavation and embankment areas to dry in situ soils, hauling borrow material to embankment before an Adverse Weather occurrence, but is only able to disk excavation and embankment areas to dry them due to the Adverse Weather occurrence, one (1) Weather Delay Day will be allowed.
- C. If the Contractor is able to only perform disk ing operations to dry excavation and embankment areas due to in situ moisture in the soil, this is not considered an Adverse Weather occurrence or a Weather Delay Day and is considered to be a part of normal construction activities whether any other work can be performed or not.
  - D. The Engineer or Owner will utilize monthly weather data from the Local National Weather Station or from on-site observations. The determination of Contractor's entitlement for any Weather Delay days, as defined hereinabove, will be based on the entire construction duration of the phase in lieu of a month-by-month consideration. The entitlements will consider those months that conditions are better or worse than the Standard Baseline established for this contract.

For example:

1. If the total number of standard baseline days for a Phase is forty one (41) days and there are thirty six (36) days with precipitation in excess of one tenth inch (0.10") liquid measure and ten (10) weather delay days, giving a total of forty six (46) rain and weather delay days. This would amount to five (5) days in excess of the total baseline days for that Phase. Five (5) additional days will be added to the time for that Phase.
2. If the total standard baseline for a Phase is forty one (41) days and there are twenty eight (28) days with precipitation in excess of one tenth inch (0.10") liquid measure and nine (9) weather delay days, giving a total of thirty seven (37) rain and weather delay days. This would amount to four (4) days better than the total

baseline days for that Phase. Four (4) days will be deducted from the time for that Phase.

E. Baseline days will be prorated when partial months are a part of a phase/stage or the overall contract time. For example:

1. If the contract or a phase begins on April 11, including April 11, there are twenty (20) calendar days remaining in April. Twenty (20) remaining calendar days divided by thirty (30) total calendar days in April equals 0.6667. Six (6) total baseline days established for April multiplied times 0.6667 equals four (4) baseline days for the remaining twenty calendar days in April.

F. Section 01135, Weather Delays establishes an anticipated number of days of lost construction time for each month.

1. To calculate any liquidated damages for a phase/stage that is not completed on time, the number of baseline days for the actual total construction time for that phase/stage will be calculated from the standard baseline.
2. The number of weather delay days for the actual total construction time for that phase/stage will be calculated.
3. The difference in weather delay days and baseline days will then be calculated. Months that have less weather delay days than baseline days will result in a negative number.
4. The resulting difference will then be added to the contract time for the phase/stage.
5. The difference in the actual total construction time and the contract time plus weather delay days in excess of the baseline for that phase/stage will determine if and what the actual amount of liquidated damages for that phase/stage will be.

G. Weather Delay Calculation Example:

Using a **hypothetical** Phase 1 for example if:

FROM	TO	BASELINE DAYS	ACTUAL WEATHER DELAY DAYS	NUMBER OF DAYS IN EXCESS OF BASELINE
July 10, 2009	July 31, 2009	5	3	-2
Aug. 1, 2009	Aug. 31, 2009	7	11	+4
Sept. 1, 2009	Sept. 8, 2009	1	4	+3
		13	18	+5
Phase 1 Contract Time				60
Phase 1 Contract Time + Number Of Weather Delay Days In Excess Of Baseline				65
Phase 1 Actual Construction Time				67
Phase 1 Days Of Liquidated Damages				2



- H. Contractor Reporting (Monthly Basis). Throughout the duration of the contract, the Contractor and Engineer shall reconcile impacts due to weather on a monthly basis. The Contractor shall submit monthly with the pay request an itemized list of; days impacted by weather, scheduled activity that was impacted and the impact which caused the delay (temperature, mud, snow, etc.).

END OF SECTION 01135

## PART 7 - SECTION 01140 – WORK RESTRICTIONS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
  - 1. Refer also to Section 01100 “Summary”
- B. Section 01143 “Airport Project Procedures”.

#### 1.2 SEQUENCING:

- A. The Contractor shall schedule his work activities in accordance with requirements of the Phasing Plans, and these Specifications unless otherwise approved by the Owner.

#### 1.3 USE OF PREMISES

- A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.
- B. Limits: Confine constructions operations to areas indicated in the documents and necessary to the progress of the Work.
- C. Owner Occupancy: Allow for Owner occupancy of site and use by the public. The Owner will endeavor to cooperate with the Contractor's operations when the Contractor has notified the Owner in advance of need for changes in operations in order to accommodate construction operations. Conduct the work so as to cause the least interference with the owner's operations.
- D. The following existing facilities may not be used by construction personnel:
  - 1. Roadways and Parking lots, except as designated by the Owner.
  - 2. Toilet facilities.
  - 3. Public Telephones
  - 4. Public Waiting Areas
- E. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
- F. Schedule deliveries to minimize use of driveways and entrances.
- G. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

- H. Delivery vehicles, construction vehicles and other construction related hauling vehicles are restricted to the hauling/travel routes identified on the Site Phasing Plan, unless otherwise authorized, in writing, by the Owner.
- I. Storage areas will be available on site.
- J. Use of Existing Building: Maintain existing building in a weather tight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

#### 1.4 OCCUPANCY REQUIREMENTS

- A. Full Owner Occupancy: Owner will occupy the existing parking lot and terminal building and airport facilities during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.
- B. Existing Utilities: Disruption of utility services to the existing terminal and airport facilities will not be acceptable. The Contractor shall schedule all utility tie-ins with local utility service providers, and with the Owner a minimum of seven (7) calendar days before service interruption is scheduled to occur. The Contractor shall schedule utility tie-ins during off-peak hours to minimize disruption of airport operations. Utility service shall not be disrupted for more than four (4) hours. Off-peak hours are defined as midnight to 4:00 a.m.

#### PART 2 - PRODUCTS (Not Used)

#### PART 3 - EXECUTION

##### 3.1 COORDINATION WITH OCCUPANTS

- A. Occupied areas include all areas in which the Owner's regular operations will be going on or to which the Owner requires access during the construction period, whether conducted by the Owner or his tenants, clientele, or the public.
- B. Construction related activities, in general, may proceed during normal working hours, unless the work will interfere with operating procedures of the Airport. When this interference occurs, the Contractor shall arrange his activities and work schedule to be performed during non-operating hours of the area of the Airport affected. The Airport is generally in operation between the hours of 6:00 am and 6:00 pm, seven days per week.
- C. Limit access through occupied areas to those days and times, which the Owner approves.
- D. The Contractor shall review the phasing plans and shall submit his plan for providing safe and secure passageway for users of the Airport during construction activities. Any access or egress routes, which are required exits in accordance with the code, shall be maintained at all times during the construction of any given area.
- E. When the following must be modified, provide alternate facilities acceptable to the Owner:
- F. Entrances which must remain open.

- G. Doors and gates which are part of the Airport's security (SIDA) demarcation.
- H. Utilities which must remain in operation
- I. Informational signage to direct the movement of airport patrons, tenants, clientele, or the public.

### 3.2 UTILITIES

- A. Utilities are located within the construction area. Contractor shall coordinate with Owner and Engineer to identify utilities. Contractor shall be responsible for contacting utility owners and locating all existing utilities within the work area. Contractor shall be responsible for costs associated with utility location, protection, and for required repairs due to failure to comply with these requirements.
- B. Information concerning underground utilities and service lines may be obtained from the utility companies, Owner, FAA, or the national weather service. The Owner and the Engineer do not guarantee their accuracy. The contractor is advised to determine the exact locations from the available sources of information, or provide his own means of detection.
- C. Contractor shall notify airport personnel, utility companies, FAA personnel, and weather bureau personnel before excavating in any area.
- D. Agencies / utility companies with service on the airport are as follows:
  - 1. Federal Aviation Administration
  - 2. Electric
  - 3. Domestic Water
  - 4. Reclaimed Water
  - 5. Sewer
  - 6. Cable Television
  - 7. Telephone Service
- E. In all construction areas, all FAA cables will be marked by FAA prior to construction. Contractor is to protect cables during construction. Contractor shall notify FAA supervisor in advance of construction activity to allow the FAA sufficient time to locate and mark existing field cable and to avoid unscheduled facility outages. Any FAA equipment/cable that is damaged by the contractor shall be repaired as approved by the FAA supervisor / representative. All cable splice/repairs shall meet FAA specifications and be accomplished to the satisfaction of the FAA representative. Qualified workmen regularly engaged in that type of work shall perform all cable work. If an existing cable cannot be repaired to the satisfaction of the FAA, new cable of like kind shall be installed.
- F. Maintain existing surface and pipe storm drainage, unless otherwise noted.

### 3.3 USE OF SITE

- A. The Contractor shall at all times so conduct his work as to create no hindrance, hazard, or obstacle to vehicular or aircraft traffic using the airport.
- B. The contractor shall control his operations and the operations of his subcontractors and all suppliers so as to provide for the free and unobstructed movement of the public in the existing

parking lot areas not closed by for the Contractor's use. Barricades shall be provided to restrict the public's access to the project site at all times.

- C. Access to the work: access to the work will be via the access routes shown on the plans or as directed by the Owner. The contractor shall identify access routes with suitable signs, barricades and similar equipment.
- D. All construction traffic shall enter and exit the project area through access points directed by the Owner. Contractor will be responsible for security of construction access gates in accordance with the airport's security plan.
- E. Haul Route: All existing roads and parking lot areas that will be used as part of the haul road will be restored to their original condition. After completion of the project the Contractor will be responsible for daily clean-up operations of debris that may be on the haul road.
- F. The existing airport pavements, access roads, and haul routes may not be capable of supporting certain types of construction equipment. Prior to bidding, the Contractor shall fully satisfy himself as to the ability of the existing airport pavements to satisfactorily sustain the type of equipment he plans to use. Contractor shall size the equipment used for construction accordingly. The Contractor at no additional cost to the Owner shall repair any damage caused by hauling or any other construction activity to existing pavement.
- G. It is of specific importance that all aircraft operating areas, parking lots, terminal, and landscaped areas be kept free of construction related debris due to potential aircraft damage. The Contractor shall police the construction and adjacent site area regularly to assure that no debris creates an endangerment to aircraft. Contractor shall maintain these pavements clean throughout the project.
- H. Project access, staging area, waste area, stockpile area and all haul roads shall be restored to original condition including topsoil and seeding at job completion at no additional cost to owner.
- I. The location (and size) of the Contractor's staging area will be determined at the pre-construction conference.
- J. All construction material and equipment shall be located and stored in the designated staging area(s) only.
- K. The Contractor will be responsible for the cleanup and disposal of all trash and debris created by his work or personnel. All trash and debris must be disposed of offsite.
- L. The contractor will be responsible for the storage and security of his material and equipment and shall erect storage facilities and fencing as necessary. The contractor's storage and staging area shall be in the general location(s) shown on drawing.
- M. Contractor shall control dust at an acceptable level. The Contractor shall be required to keep a water supply at the project site during heavy equipment usage areas.
- N. Burning of debris will not be allowed on airport property.
- O. All vehicles operated on existing pavements to remain shall be rubber tired.
- P. The Contractor shall not enter or encroach upon an aircraft parking area or operational taxiway without first obtaining permission from the Owner or FAA.

- Q. Damage to aircraft, ground equipment, or facilities on the ground, resulting from hauling or storage of material or other activities in connection with the execution of the contract work, shall be repaired or replaced by the Contractor in as good or better condition as originally found.
- R. Stock-piled material shall be constrained in a manner to prevent movement resulting from aircraft engine blast or wind.
- S. All vehicles of the Contractor's forces shall be parked in designated areas only. Contractor to provide temporary gate and fencing at perimeter and is to be responsible for security, maintenance, and restoration of areas.
- T. In the event the Contractor services his equipment on airport property, all oil and fluids removed from the equipment must be collected and disposed of in accordance with the local, state and federal environmental laws. If a hazardous, or regulated material is spilled, it must be promptly reported to the airport and cleaned up by the contractor at his expense.

### 3.4 PHASING AND SEQUENCING

- A. Existing easements to other properties shall be maintained at all times. Areas outside the project limits are designated as restricted areas. The Contractor's forces are prohibited from entering restricted areas at any time, unless specifically authorized by the Engineer or airport operations department.
- B. Contractors shall be responsible for visiting the site to become familiar with the existing conditions. The documents shall serve to aid the contractor in his evaluation of the sequences and extents of construction; but shall not be held to be all-inclusive. Any conflicts or apparent deficiencies must be submitted to the Engineer in writing prior to bidding.
- C. Portions of the airport shall be occupied during construction. The Contractor shall comply with the following life safety issues. Failure to list all life safety issues does not relieve the Contractor from complying with federal, state and local codes, the contractual agreement between the Contractor and Owner, and other governing bodies which have jurisdiction on this project. The following are interim life safety code issues which are specific to this project and must be addressed:
  - 1. Insure all exits provide free and unobstructed egress. The owner shall receive written notification and shall respond with approval if alternative exits must be designated.
  - 2. Ensure fire alarm, detection and suppression systems are not impaired. A temporary, but equivalent, system shall be provided, installed and tested prior to any existing fire system being impaired.
- D. Smoking shall be prohibited in all areas of the existing and new buildings. Only in designated areas outside of the buildings shall smoking be allowed.
- E. Develop and enforce storage, housekeeping and debris removal procedures that reduce the flammable and combustible fire load to the lowest level necessary for daily operations.
- F. Secure all tools and construction materials during breaks and non-construction hours.

END OF SECTION 01140

## PART 8 - SECTION 01143 – AIRPORT PROJECT WORK PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section. Refer also to Section 01100 “Summary”.

#### 1.2 INTRODUCTION – AIRPORT OPERATIONS

- A. The safety of the Airport patrons and personnel and of the Contractor’s personnel is paramount throughout construction. Except where stricter requirements are indicated, the Contractor shall follow the safety guidelines referenced in the Federal Aviation Administration (FAA) [www.faa.gov] Advisory Circular (AC) No. 150/5370, latest edition, “Operational Safety on Airports During Construction”.
- B. This project may include Contractor operations near active Air Operations Areas (AOA). The Airport will conduct normal aircraft operations during the course of this project, subject to certain restrictions called out in this section or elsewhere in the specifications. Therefore, to provide for the security and safety of Airport users and the Contractor’s forces, as well as to minimize interruptions to aircraft operations, the Contractor shall limit his work within the areas designated and conduct his operations as specified.
- C. Construction Scheduling and Coordination: The Work will be conducted so as to provide the least possible interference with the Owner’s daily operations. Prior to commencing Work on-site, the Contractor shall submit, and secure approval from the Owner, a complete schedule for the project, identifying any expected periods of potential conflict.
- D. Coordinate Construction Activities with Airport Operations and Security Plan:
  - 1. Provide and/or secure the following:
    - a. Safety Plan Report
    - b. Quality Assurance Plan Report
    - c. Security badges/training
  - 2. Reports under this heading shall be prepared in compliance with Airport Operations Department requirements.
- E. Contractor may contact the AIRPORT ENGINEER for requirements and clarifications related to this topic.

#### 1.3 AIRPORT SAFETY

- A. Contractor shall obtain, have knowledge of, and incorporate the following safety provisions into the construction project:
  - 1. Operational Safety on Airports During Construction – AC-150/5370-2, latest edition.

2. Airport Safety Self-Inspection – AC-150/5200-18, latest edition.
  3. Painting, Marking, and Lighting of Vehicles Used on an Airport – AC 150/5210-5, latest edition.
  4. Consideration of Improvement of Airport Safety – FAR, PART 139.
- B. Contractor shall comply with all Airport security regulations that may be established to protect airport operations.
1. Additional notes on the Phasing and Staging drawings and in the general requirements sections of these Contract Documents provide a level of safety and security requirements and guidelines.
  2. The Contractor shall incorporate the Airport guidelines and requirements into his Construction Safety and Security Plan, and attain Owner's approval in advance of mobilizing Contractor's forces on the Airport premises.
  3. Failure to comply with the Contractor's Safety and Security Plan, or violation of any Airport safety and security regulations and protocols, will result in disciplinary action. At a minimum, violations will result in temporary restriction of an individual's access to secure areas of the Airport. Disciplinary actions may, as relates to the type and nature of the violation, and at the Airport's sole discretion, include:
    - a. Verbal reprimand and temporary revocation of access privileges
    - b. Temporary revocation of access privileges and mandatory re-training in Security Class and Airport Safety and Security procedures
    - c. Permanent restriction of access privileges
    - d. Permanent loss of access privileges
    - e. Restriction from worksite
    - f. Restriction and removal from Airport property(ies)
    - g. Fines, as defined elsewhere in this document or in the security plan
- C. All actions of the Contractor's employees, subcontractors and suppliers are the sole responsibility of the Contractor. All employees, subcontractors and suppliers must be educated regarding related work and the safety requirements of the aircraft operations area and public safety adjacent to the construction area.
- D. Observe and/or follow all safety related instructions by any Federal Aviation Administration (FAA), Transportation Security Administration, and Airport personnel at all times.
1. In case of emergency, the Contractor shall make every effort to remove the equipment and personnel from affected area(s) and abide by decisions made by the Owner or his/her representative.
    - a. To the best of his ability, the Contractor shall immediately comply with directives from representatives of the FAA and Transportation Security Administration. Contractor will then promptly notify first the designated Airport Operations representative and second the Owner's project representative of the incident.
    - b. See General Conditions and other parts of this Section for additional information in case of emergencies and other unforeseeable conditions beyond the Control of the Contractor or the Owner, which may include acts of God or the public enemy, acts of government, hurricanes, fires, floods, or safety and security incidences and changes in national transportation safety and security procedures.
- E. The Contractor shall cooperate with the airport users, through the Owner, in scheduling his operations to provide adequate clearances for safe access, circulation and exit of passengers;



loading and unloading of baggage, and maneuvering, taxiing, and parking of aircraft and ground equipment.

- F. Work will be carried on in such a manner as to leave the portion of the building open to airport users free from hazards at all times.
  - 1. All walk surfaces shall be kept clean and free of dirt, stone, and debris.
  - 2. Mud tracked into portions of the building that are in use shall be cleaned immediately.
  - 3. Waste and loose material capable of causing harm to the public shall not be tolerated.
- G. Vehicular Markings: Contractor vehicles and equipment shall be marked with checkered flags and lighted with flashing beacons to comply with requirements of FAA AC 150/5210-5, latest edition.
- H. Obstructions to Navigation:
  - 1. Violation of Safety Zone Surfaces: Penetration of equipment, vehicles, materials, or men into the safety zones and approach surfaces requires the preparation and distribution of Notices of Airmen (NOTAMs) in advance to the actual penetration.
  - 2. Scheduling: When part of the work in this project is in violation of FAR Part 77, the clearance distance requirements from runway and taxiway edges shall be incorporated into the construction sequence schedule. At no time shall the construction limits of the area under construction violate the safety zones without prior notification to and approval by the Engineer.
- I. Coordination and Communication: Work within and adjacent to active AOAs shall be coordinated with the Owner prior to commencement of the activity. Work crews in these areas shall be accompanied by the construction superintendent who shall be in constant radio contact with ATC.
- J. Safety and security can be discussed with the Contractor or his/her representative at the Pre-Construction Conference and at progress meetings at the job site.

#### 1.4 AIRPORT SECURITY

- A. Secured Area Requirements: As part of the Airport Security Plan, the Contractor will be required to adhere to all FAA and TSA security requirements and all construction personnel working in, or having access to, secure areas (AOA side of the Secured Area, see Phasing and Staging Plans for limits) will be required to obtain and wear badges issued by the Owner and comply with provisions of the Airport Security Plan.
- B. The Contractor shall provide security within the construction area and shall keep all unauthorized personnel out.
- C. Contractor should confine all construction personnel to within the construction limits during each phase of the work.
- D. Contractor security measures will be discussed and reviewed at the Pre-Construction Conference.

#### 1.5 CONSTRUCTION SAFETY REQUIREMENTS:

- A. General Safety and Accident Prevention: The Contractor shall comply with all applicable federal, state, and local laws, ordinances, and regulations governing safety, health, and sanitation; shall

provide barricades; and shall take any other needed actions, on his own responsibility, that are reasonably necessary to protect the life and health of employees on the job, the safety of airport users, and the safety of moving and parked aircraft, and other property during the performance of the work.

1. Safety Officer: The Contractor is required to designate a Safety Officer who will be the liaison between the Contractor, the Engineer and the Owner in all safety related matters for the duration of the project. The Safety Officer shall be on call 24 hours per day for emergency maintenance of airport hazard lighting, barricades, and other safety features.

- a. The Safety Officer's duties shall include accident prevention.

- B. Protection of Utilities: The Contractor shall be responsible for field marking and protecting all utilities within the construction limits.
- C. Storage of Equipment, Vehicles, and Materials: All equipment, vehicles, and materials must be stored in the designated storage or staging area or in areas acceptable to the Engineer.
- D. Limitations on Construction Methods:
  1. No open flames or burning will be allowed on Airport property. Burning of debris will not be allowed on airport property
  2. Stockpiled material shall be constrained in a manner to prevent displacement by jet blast, propeller blast, or wind.
- E. Prior to commencing the work, Contractor shall obtain all necessary permits and approvals, including building construction permits, required for the project.
- F. Contractor to submit a safety security plan for approval within ten days of receipt of Letter of Intent to Award, but in no case later than the Pre-Construction Conference.

#### 1.6 PHASING AND SEQUENCING

- A. The Contractor shall schedule his work activities in accordance with requirements of the Phasing Plans, and these Specifications unless otherwise approved by the Owner.
- B. Existing easements to other properties shall be maintained at all times. Areas outside the project limits are designated as restricted areas. The Contractor's forces are prohibited from entering restricted areas at any time, unless specifically authorized by the Airport Operations office.
  1. Construction stakeout shall be performed by Contractor in accordance with the specifications. It shall be the responsibility of the Contractor to provide all measurements that may be required to lay out the construction.
- C. Contractor shall be responsible for visiting the site to become familiar with the existing conditions. The documents shall serve to aid the Contractor in his evaluation of the sequences and extents of construction; but shall not be held to be all-inclusive. Any apparent conflicts or deficiencies must be submitted to the Engineer, in writing, prior to bidding.
- D. Owner/Tenants/Vendors shall be responsible for the removal of their furnishings and equipment unless noted otherwise.

- E. Contractor shall be responsible for relocation of fixed furnishings, airport equipment, and security equipment necessary for the progress of the Work. Coordinate requirements with Owner or Tenant as applicable.

## 1.7 USE OF PREMISES

- A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to staging areas, and areas identified for each phase of construction elsewhere in the Construction Documents.
  - a. Restricted Areas: Secure Identification Display Areas, Secured Area, and Aircraft Operations Area:
    - 1) Access to some areas of the Project Work Area is restricted to cleared personnel. Contractor shall be responsible for the performance of his own forces, of all subcontractors and subcontractors' forces, and suppliers.
    - 2) Contractor is responsible for making himself and his forces on site aware of the Airport Security Program as it relates to access to the Airport Operations Area.
    - 3) Perform work in a manner so as to limit construction activities in restricted areas of the Airport. Contractor's approved Superintendent shall be present for any construction activity that is expected to occur in the Secured Area.
2. The Owner will endeavor to cooperate with the Contractor's operations when the Contractor has notified the Airport Engineer in advance of need for changes in operations in order to accommodate construction operations. Conduct the work so as to cause the least interference with the Owner's operations.
3. The following existing facilities may not be used by construction personnel:
  - a. Public elevators.
  - b. Toilet facilities.
  - c. Parking lots, except as designated in the staging plans.
  - d. Public telephones
  - e. Public waiting areas
4. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - a. Schedule deliveries to minimize use of driveways and entrances.
  - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
  - c. Delivery vehicles, construction vehicles and other construction related hauling vehicles are restricted to the hauling/travel routes identified on the Site Phasing Plan, unless otherwise authorized, in writing, by the Airport Engineer.
  - d. The area immediately adjacent to the Area of Work is limited. Coordinate transportation of workers and equipment from the Staging Area to this area in order to limit the number of vehicles present. Limit total number of vehicles in this area to the space available, and as approved in advance by the Airport Engineer. Only authorized work vehicles, as described elsewhere in this document, will be allowed

- access to the Secured Area. No personal vehicles will be allowed in the staging areas within the Secured Area.
- e. Storage areas will be available on site.
5. Signs: Provide signs adequate to direct visitors. Do not install, or allow to be installed, signs other than specified sign(s) and signs identifying the principal entities involved in the project.
- B. Use of Existing Building: Maintain existing building in a weather tight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.
- C. Emergency Preparedness / Special Event Conditions: The Contractor shall fully participate with the County in reasonable measures to protect the general public, the County and the Airport, their employees, the Contractor and his employees, and his forces, equipment, and materials from damages from unforeseeable causes beyond the control of the Owner or the Contractor, including but not limited to: unusual weather events, acts of God, acts of public enemies, acts of government, fires, floods, discovery of pre-existing hazardous materials or hazardous conditions, epidemics, quarantine or public-health regulations, and strikes or lockouts.
1. In the event of an emergency affecting the safety or security of the public, Airport tenants, Airport employees, Contractor or subcontractor employees, the Project, other property or individuals, then the Contractor, without special instruction or authorization, shall act to prevent and reduce injury, damage, or loss.
- a. Upon observation of conditions, acts or events indicating risk to safety or security anywhere on Airport property, Contractor shall immediately notify Airport Operations and Airport Engineer.
2. The Contractor and representatives of primary subcontractors, to include at a minimum the Superintendent, Safety Coordinator, and Security Coordinator, shall attend and take part in bi-annual emergency preparedness planning meetings organized by the Airport.
3. In the event of foreseeable (at least 24-hours advance warning) uncontrollable conditions that may impact the Airport (e.g., approaching hurricane), the Contractor is responsible for securing the Project Area to reduce risk of damage to persons or property, to the satisfaction of the Owner. Upon notice from the Airport Engineer or other authority having jurisdiction of impending hazardous conditions, the Contractor shall:
- a. Enclose any in-progress openings in the building envelope with weather-proof temporary partitions.
- b. Cover exposed substrates or incomplete exterior finishes securely with anchored water-resistant coverings.
- c. Secure unused materials in containers and/or trailers and remove from areas in, on, or adjacent to construction or existing buildings.
- d. Remove all equipment or materials that are likely to become air- or water-borne, to include staging materials and temporary facilities, from, on or adjacent to the AOA.
- e. Remove cranes, hoists, and other mobile equipment over ten feet tall from the site, or to covered storage, if allowed by the Airport Engineer.
- f. Remove all non-essential vehicles from the Site, and secure off-site under Contractor's care and control.
- g. When practical, completely demobilize staging area on the Airside of permanent fences and relocate to other staging areas on the Landside, non-secure side of Airport buildings and security fence.

- h. When practical, remove equipment and materials to secured storage off-site, approved per other parts of these specifications.
    - i. Cover, secure, and anchor any equipment and materials in the non-secure staging area that cannot practically be relocated to secured storage off-site.
    - j. Secure the Work and Site as is most practicable, and in the best interests of the public, the Project, the Owner, and Contractor.
    - k. Provide the Airport Engineer with emergency contact information for key personnel.
    - l. Evacuate non-essential personnel to safer locations.
- 4. Contractor is fully responsible for the safety and security of the Project throughout Construction. In any special event, should the Contractor fail to remove forces, equipment, and materials under his control from the Owner property, or to secure the same and the Work to the satisfaction of the Airport Engineer, and in the opinion of the Airport Engineer those forces equipment, or materials shall be at risk of injury, damage or loss, or of causing injury, damage, or loss to the Owner or others; then the Owner may, or may not, choose to remove, relocate, or secure the Work by whatever means the Owner deems in the best interest of the Owner and the Project.
  - a. The Contractor agrees in a special event that he has abandoned any property not secured to the satisfaction of the Airport Engineer.
  - b. Should the Owner be required to secure items under the control of the Contractor, the Contractor shall reimburse the Owner for actual costs incurred in securing the Work, to include, but not limited to, labor, oversight, use of equipment, rental of equipment, cost of fuels, storage fees, material, utilities, and incidentals.
  - c. The Owner assumes no responsibility for damage or loss of Contractor property, equipment, materials or parts of the Work not secured by the Contractor, or necessitated to be secured or relocated in the interests of public safety or security.
- D. Cleanliness of Site: Contractor shall be responsible for keeping aircraft operations areas, movement areas, ground service routes, work open to or visible from public areas, tenant operations areas, work areas used or accessed by others, haul route, and staging areas in an orderly and clean condition.
  - 1. Areas on or adjacent to aircraft operations shall be kept clean and free of loose debris that may pose a hindrance to airport operations. Contractor shall police area on a regular basis, provide adequate containers for anticipated debris, and remove loose debris and containers to storage away from aircraft operations area and security fence on a more-than-daily basis. Further requirements are noted elsewhere in the contract documents, the drawings and project manual.

## 1.8 OCCUPANCY REQUIREMENTS

- A. Owner Occupancy: Allow for Owner occupancy of site and use by the public.
- B. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

1.9 COORDINATION WITH DAILY OPERATIONS

- A. Occupied areas include all areas in which the Owner's regular operations will be going on or to which the Owner requires access during the construction period, whether conducted by the Owner or his tenants, clientele, or the public.
- B. On-Site Work Hours: Construction related activities, in general, shall proceed during normal working hours, unless the work will interfere with operating procedures of the Airport. When this interference occurs, the Contractor shall arrange his activities and work schedule to be performed during non-operating hours of the area of the Airport affected. Some areas of the Airport are in operation for fewer hours each day than the overall operating hours, and the Contractor shall have the option of working those areas which are not in operation when the construction activities cause neither interference nor safety or security problems to the users of the Airport. Contractor may, upon approval of the Owner, choose to conduct construction activities during off hours. Owner requires that an authorized representative of Airport Operations be present on-Airport during Contractor Activities. Work in public areas, and work impacting airline or tenant operations areas, shall be coordinated with the Airport and respective tenants not less than thirty (30) days in advance of anticipated work in those areas.
  - 1. Normal Operating Hours: The Airport is generally in operation between the hours of 6:00 am and 6:00 pm, seven days per week. Precise work hours shall be coordinated with Airport at Pre-Construction Conference, and may be adjusted, if needed, at monthly meetings thereafter.
  - 2. Off-Hours: Off hours are generally defined between as being between 6:00 pm and 6:00 am in most areas.
    - a. Contractor shall limit and restrict Work during off-hours. Contractor shall coordinate with Airport not less than fifteen days in advance of performing any off-hours work, and shall be responsible for reimbursing the Owner for additional costs incurred to provide staff during non-normal hours.
  - 3. Coordination with Aircraft Operations: Contractor shall coordinate his activities and work to minimize impacts to the traveling public, Airport, and operations.
- C. Limit access through occupied areas to those days and times which the Airport Engineer approves.
- D. The Contractor shall review the phasing plans and shall submit his plan for providing safe and secure passageway for users of the Airport during construction activities. Any access or egress routes which are required exits in accordance with applicable building codes shall be maintained at all times during the construction of any given area.
- E. When the following must be modified, provide alternate facilities acceptable to the Airport Engineer:
  - 1. Entrances which must remain open.
  - 2. Doors and gates which are part of the Airport's security (Secured Area) demarcation.
  - 3. Utilities which must remain in operation.
  - 4. Informational signage to direct the movement of passengers.
- F. Scheduling: Contractor shall review and coordinate Construction Schedule with Owner.
  - 1. Submit a comprehensive preliminary construction schedule for review at the Pre-Construction Conference. Refer to other sections of these general requirements for additional information.

2. Changes to the approved construction schedule will not be allowed unless approved by the Airport Engineer in writing. A construction schedule with project sequencing and coordination timetables for construction adjacent to or within aircraft operation areas must be approved before any work commences.
3. Changes to Security Operations: Notify Engineer in writing at least forty-five calendar days in advance of any proposed changes affecting the Secured Area, including any changes to the security fence, any gates or doors opening to the Secured Area, access control devices at doors and gates on the line of demarcation, modifications to staging areas in the Secured Area, modifications to Security Operations such as using a guard at a gate rather than existing access control. Proposed changes, including temporary changes, to the Airport Security Plan must be approved and filed with the authorizing agencies not less than thirty days prior to the change taking affect. Contractor shall be liable for any delays in prosecuting his work resulting from failure to provide sufficient notice.
4. Notify Engineer at least seven days in advance of any proposed changes to the construction schedule for approval.
5. Notify airport Owner and Engineer at least ten calendar days in advance of mobilizing to the project staging area.
6. At times and days to be determined at the Pre-Construction Conference, monthly meetings shall be held involving the Contractor's superintendent, the Engineer and the Airport Engineer; weekly meetings may be held involving the construction superintendent and the Owner's designate representative.
7. The Contractor shall be responsible for informing in writing the airport of the construction schedule for the approaching two weeks' construction activity.
8. All subcontractors shall supply the above information to the general Contractor for inclusion in their report. Any storage of materials, access or egress problems, traffic flow or normal airport operations which are to be affected must be protected and/or agreed upon by the Airport Engineer. All costs shall be incurred by the Contractor.

#### 1.10 UTILITIES

- A. Utilities are located within the construction area. Contractor shall coordinate with Owner and Engineer to identify utilities. Contractor shall be responsible for contacting utility owners and locating all existing utilities within the work area. Contractor shall be responsible for costs associated with utility location, protection, and for required repairs due to failure to comply with these requirements.
- B. Information concerning underground utilities and service lines may be obtained from the utility companies, Owner, FAA, or the national weather service. The Owner and the Engineer do not guarantee their accuracy. The Contractor is advised to determine the exact locations from the available sources of information, or provide his own means of detection.
  1. Agencies / utility companies with service on the airport are as follows:
    - a. Federal Aviation Administration
    - b. National Weather Service
    - c. Gas, Electric
    - d. Domestic Water
    - e. Sewer
    - f. Cable Television
    - g. Telephone Service
- C. Contractor shall notify airport personnel, utility companies, FAA personnel, and weather bureau personnel before excavating in any area.

- D. In all construction areas, all FAA cables will be marked by FAA prior to construction. Contractor is to protect cables during construction. Contractor shall notify FAA supervisor in advance of construction activity to allow the FAA sufficient time to locate and mark existing field cable and to avoid unscheduled facility outages. Any FAA equipment/cable that is damaged by the Contractor shall be repaired as approved by the FAA supervisor / representative. All cable splice/repairs shall meet FAA specifications and be accomplished to the satisfaction of the FAA representative. Qualified workmen regularly engaged in that type of work shall perform all cable work. If an existing cable cannot be repaired to the satisfaction of the FAA, new cable of like kind shall be installed.
- E. Maintain existing surface and pipe storm drainage, unless otherwise noted.

## PART 2 - PRODUCTS

### 2.1 BARRICADES

- A. Barricades shall be constructed and installed as described in other sections of the specifications and as shown on the drawings, and in accordance with the current version of AC No. 150/5370-2 "Operational Safety on Airports During Construction" and the *Manual on Uniform Traffic Control Devices* (MUTCD).
- B. Maintain barricades throughout construction.
  - 1. Inspect barricades in place at least twice daily to ensure correct placement and functional flags and light.
  - 2. Immediately correct any damage or disrepair, or replace barricade.
- C. Furnish and maintain all barricades lights.
  - 1. Supply all batteries and lamps for barricade lights necessary for Project.
- D. Remove and relocate barricades as directed by the Engineer and/or the Airport Engineer during construction in accordance with referenced guidelines.

## PART 3 - EXECUTION

### 3.1 COORDINATION

- A. The Contractor shall have a general supervisor on the job at all times during construction activity.
- B. The Owner will designate a representative who will issue all notices to airmen (NOTAMs) with the Federal Aviation Administration.
- C. The Contractor shall furnish the Owner's representative with the necessary information on construction conditions (apron closure, tie-ins to existing movement areas, etc.) so that the Airport can advise flight control to issue NOTAMs in accordance with established criteria.
- D. The Contractor shall make reasonable effort to coordinate with separate Contractors working in the same area or adjacent areas. Specific overlap areas are noted elsewhere in the contract documents, the drawings and project manual.



### 3.2 CONTRACTOR OPERATIONS ON SITE

- A. The Contractor shall at all times so conduct his work as to create no hindrance, hazard, or obstacle to vehicular or aircraft traffic using the airport.
  - 1. The Contractor shall control his operations and the operations of his subcontractors and all suppliers so as to provide for the free and unobstructed movement of aircraft in the aircraft operations areas of the airport. This area shall be accessible to the Contractor on a limited basis.
  - 2. Aircraft always have right of way in operating areas.
  - 3. The Contractor shall not enter or encroach upon an aircraft parking area or operational taxiway without first obtaining permission from the Owner or FAA, as allowed under the Security Plan.
- B. Damage to aircraft, ground equipment, or facilities resulting from hauling or storage of material or other activities in connection with the execution of the contract work, shall be repaired or replaced by the Contractor in as good or better condition as originally found.
- C. All construction traffic shall enter and exit the project area through access points, as shown on the drawings and as directed by the Airport Operations representative. Access to the work: will be via the access routes shown on the plans or as directed by the Airport Engineer.
  - 1. The Contractor shall identify access routes with suitable signs, barricades and similar equipment.
  - 2. Contractor will be responsible for security of construction access gates in accordance with the Airport Security Plan.
  - 3. Contractor to provide temporary gate and fencing at perimeter of project areas as needed, and is to be responsible for security, maintenance, and restoration of areas.
- D. Use of Contractor Vehicles on airport property:
  - 1. Contractor's vehicles used on the Airside portion of the premises must be clearly marked.
  - 2. All vehicles operated on existing pavements to remain shall be rubber tired.
  - 3. All vehicles of the Contractor's forces shall be parked in designated areas only.
  - 4. In the event the Contractor must service his equipment on airport property, all oil and fluids removed from the equipment must be collected and disposed of in accordance with local, state and federal environmental laws. If a hazardous or regulated material is spilled, it must be cleaned up by the Contractor and promptly reported to the airport.
- E. Haul Route: Existing roads used as part of the haul road shall be restored to their original condition after completion of the project, unless noted otherwise. The Contractor will be responsible for daily clean-up operations of debris that may be on the haul road.
  - 1. The existing airport pavements, access roads, and haul routes may not be capable of supporting certain types of construction equipment. Prior to bidding, the Contractor shall fully satisfy himself as to the ability of the existing airport pavements to satisfactorily sustain the type of equipment he plans to use. Contractor shall size the equipment used for construction accordingly. As part of the Work, the Contractor shall repair any damage caused by hauling or any other construction activity to existing pavement.
  - 2. It is of specific importance that all aircraft operating areas be kept free of debris due to potential aircraft damage. The Contractor shall police the construction and adjacent site area regularly to assure that no debris creates an endangerment to aircraft. Contractor shall maintain these pavements clean throughout the project.

3. Except where designated on plans or as authorized by Engineer or Airport Engineer, Contractor will not be allowed to use any of the existing runways, taxiways, or apron as part of the haul road.
  4. The Contractor shall restore any project access route, staging area, waste area, stockpile area and all haul roads to the original condition, including topsoil and seeding, at job completion.
- F. The Contractor's staging area has been shown on the plans for information purposes only. The actual size and location will be determined at the Pre-Construction Conference.
1. All construction material and equipment shall be located and stored in the designated staging area(s) only.
  2. The Contractor will be responsible for the daily cleanup and regular disposal of trash and debris created by his work or personnel. Trash and debris must be disposed of offsite.
  3. The Contractor will be responsible for the storage and security of his material and equipment and shall erect storage facilities and fencing as necessary. The Contractor's storage and staging area shall be in the general location(s) shown on drawing.
- G. Contractor shall control dust at an acceptable level. The Contractor may be required to keep a water supply at the project site during heavy equipment usage areas.
- H. Stockpiled material shall be constrained in a manner to prevent movement resulting from aircraft engine blast or wind.

### 3.3 COMMUNICATIONS AND CONTROLS

- A. Contractor shall maintain communication with Airport Operations at all times during construction activity or access in the Aircraft Operations Area (AOA).
- B. When the Contract requires the maintenance of vehicular traffic on 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 such road, street, or highway open to all traffic and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall furnish, erect and maintain barricades, warning signs, flagmen, and other traffic control devices in reasonable conformity with the *Manual of Uniform Traffic Control Devices* for streets and highways unless otherwise specified herein.
- C. If the Contractor is given approval to work at night, he shall provide lights at the work site. Type, direction, number and location of lights shall be submitted not less than ten days in advance for review and approval by the Airport Engineer. Where lighting affects the aircraft apron, it shall be accomplished in a manner to create no hindrance to aircraft, aircraft operations, or the aircraft control tower. Upon notification of any conflict, contractor shall adjust lighting in the field as directed by the Airport Engineer or the Engineer.
- D. Appropriately mark or light all equipment to be operated on the airside area in accordance with FAA AC 150/5210, latest edition. Maximum height of equipment shall be as shown on safety and sequencing plans unless approved by the FAA, and Airport Engineer.
- E. All vehicles used on the airfield shall meet airport requirements for marking and lighting all equipment.

1. Vehicles shall be marked with rotating yellow beacons or 3 by 3 orange and white flags (if daylight operation only) in accordance with FAA AC 150/5210-5, latest edition, in addition to company logos and markings identifying each piece of equipment.
  - a. Advisory Circular may be obtained from the FAA ([www.faa.gov](http://www.faa.gov)).

### 3.4 SECURITY GATES AND FENCING:

- A. Responsibility for Security: The Contractor has the responsibility for maintaining control of the access gates or any other entrance to the construction site within the project work area.
  1. The Contractor's method of maintaining security shall be set forth in his Security Plan. Deviations or variations from the Contractor's Security Plan must be approved by the Owner, in advance, in writing.
  2. Any change, including temporary changes, in operation of existing gates or doors requires advance coordination with the Airport Engineer.
  3. The Contractor shall maintain existing gates and access routes in current operation, unless specifically noted otherwise in other parts of the contract documents, drawings, and specifications; or as authorized in writing by the Airport Engineer.
  4. The Contractor may utilize a gate guard or install an automatic operated gate controller with limited access with numeric keypad.

END OF SECTION 01143

## PART 9 - SECTION 01210 - ALLOWANCES

### PART 1 - GENERAL

#### 9.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 9.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
  - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
  - 1. Lump-sum allowances.
  - 2. Testing and inspecting allowances.
- C. Related Sections include the following:
  - 1. Division 1 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders for allowances.
  - 2. Divisions 2 through 34 Sections for items of Work covered by Allowances.

#### 9.3 SELECTION AND PURCHASE

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

#### 9.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

9.5 COORDINATION

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

9.6 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner under allowance and shall include taxes, freight, and delivery to Project site.
- B. Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.

PRODUCTS (Not Used)

EXECUTION

9.7 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

9.8 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

9.9 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Unforeseen to Project Conditions: Include a Lump-Sum allowance of \$15,000 (fifteen thousand dollars), to be used as directed by Owner to adjust conditions in the field for differing existing conditions or tenant-requested changes during the progress of the work.

END OF SECTION 01210

## PART 10 - SECTION 01250 - CONTRACT MODIFICATION PROCEDURES

### PART 11 - GENERAL

#### 11.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 11.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections include the following:
  - 1. Division 1 Section "Allowances" for procedural requirements for handling and processing allowances.
  - 2. Division 1 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

#### 11.3 MINOR CHANGES IN THE WORK

- A. Engineer will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Engineer's Supplemental Instructions."

#### 11.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by Engineer are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  - 2. Within **15 days** after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.

- d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Engineer.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  4. Include costs of labor and supervision directly attributable to the change.
  5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
  6. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.
- C. Proposal Request Form: Use AIA Document G709 for Proposal Requests or forms provided by Owner.

#### 11.5 ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
1. Include installation costs in purchase amount only where indicated as part of the allowance.
  2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
  3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
  4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within **15 days** of receipt of the Change Order or Construction Change Directive

authorizing work to proceed. Owner will reject claims submitted later than 15 days after such authorization.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

#### 11.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Engineer will issue a Change Order for signatures of Owner and Contractor on the form included in the Project Manual in the Appendix to the General Conditions.

#### 11.7 CONSTRUCTION CHANGE DIRECTIVE / FIELD DIRECTIVE

- A. Construction Change Directive: Engineer may issue a Construction Change Directive on AIA Document G714 or the form included at end of Part 3. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
  1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PRODUCTS (Not Used)

EXECUTION (Not Used)

2. Forms: Sample forms, as listed in articles above, are attached following this Part.
3. Forms are samples only, and may be modified by agreement during or after the pre-Construction Conference.

END OF SECTION 01250



**SPACE COAST REGIONAL AIRPORT  
HANGAR 52 DEMOLITION**

**INFORMATION NOTICE No. IN – \_\_\_\_\_**

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

FROM: \_\_\_\_\_

TO: \_\_\_\_\_

SUBJECT: \_\_\_\_\_

SPECIFICATION NO: \_\_\_\_\_

DRAWING REFERENCE: \_\_\_\_\_

**DESCRIPTION:**

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

Engineer or Construction  
Manager Company \_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_  
If this notice causes any cost or time impact to your work, do not proceed; submit a Change Proposal (CP) for changes in Contract Sum and/or Time within fifteen (15) days. If this response indicates no change to the Work or a minor change to the Work consistent with the Contract Documents, indicate your acceptance of this notice in the space indicated below and return a copy prior to proceeding.  
\_\_\_\_\_  
\_\_\_\_\_

Accepted By: \_\_\_\_\_ Date: \_\_\_\_\_

cc: ENGINEER  
CONTRACTOR  
OWNER'S REPRESENTATIVE

**SPACE COAST REGIONAL AIRPORT  
HANGAR 52 DEMOLITION**

**CHANGE PROPOSAL No. CP – \_\_\_\_\_**

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

NOTICE OR REQUEST: **IN** or **IR** No. \_\_\_\_\_

SUBJECT: \_\_\_\_\_

**DESCRIPTION OF PROPOSED MODIFICATIONS:**

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

**REFERENCE:**

*list any attached documents*

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

**Within fifteen (15) days of receiving a related Information Notice or Response to Information Request, submit an itemized proposal for changes in the Contract Sum and/or the Contract Time for the proposed modifications, or within two (2) days of notice of changed conditions, notify the Engineer in writing of the date on which you anticipate submitting a Change Proposal.**

**THIS IS NOT A CONSTRUCTION CHANGE DIRECTIVE. THIS IS NOT A CHANGE ORDER. DO NOT CONSIDER THIS AS INSTRUCTION OR DIRECTION TO EITHER STOP WORK IN PROGRESS OR TO EXECUTE THE PROPOSED MODIFICATIONS. NO PAYMENT WILL BE MADE FOR WORK WHICH IS NOT PRIOR APPROVED IN WRITING.**

Adjust Contract Sum for this change ( Increase / Decrease ) . . . . \$ \_\_\_\_\_  
Adjust Contract Time for this change ( Increase / Decrease calendar days ) . . . . \_\_\_\_\_

Signed by:

Print Name \_\_\_\_\_  
and \_\_\_\_\_ (CONTRACTOR)

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

cc: ENGINEER  
CONTRACTOR  
OWNER'S REPRESENTATIVE

**SPACE COAST REGIONAL AIRPORT  
HANGAR 52 DEMOLITION**

**CONSTRUCTION CHANGE DIRECTIVE / FIELD DIRECTIVE No. CCD – \_\_\_\_\_**

SUBJECT: \_\_\_\_\_

WORK IN PROCESS CHANGE  
AUTHORIZATION NO.: \_\_\_\_\_

**MAKE THE FOLLOWING MODIFICATIONS TO THE CONTRACT:**

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

Payment for work related to this Construction Change Directive will be:

- ☐ LUMP SUM \$ \_\_\_\_\_  
☐ UNIT PRICE \$ \_\_\_\_\_ . \_\_\_\_ / \_\_\_\_\_ (Unit)  
☐ TIME AND MATERIALS  
☐ OTHER \_\_\_\_\_

Contract time will be as follows: \_\_\_\_\_

Signed by: \_\_\_\_\_ (ENGINEER) Date: \_\_\_\_\_  
\_\_\_\_\_ (OWNER) Date: \_\_\_\_\_

Construction shall proceed immediately with this Work upon receipt of this CCD–\_\_\_\_\_,  
if signed by the Owner and the Engineer.

Signed by: \_\_\_\_\_ (CONTRACTOR) Date: \_\_\_\_\_

Contractor signature indicates agreement with payments and time modifications.

cc: ENGINEER  
CONTRACTOR  
OWNER'S REPRESENTATIVE  
BUILDING OFFICIAL\*

\* If required

## PART 12 - SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

### PART 13 - GENERAL

#### 13.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 13.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. Coordination Drawings.
  - 2. Administrative and supervisory personnel.
  - 3. Project meetings.
  - 4. Requests for Interpretation (RFIs).
- B. Related Sections include the following:
  - 1. Division 1 Section "Summary" for a description of the division of Work among separate contracts.
  - 2. Division 1 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
  - 3. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 4. Division 1 Section "Closeout Procedures" for coordinating closeout of the Contract.

#### 13.3 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

#### 13.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.

4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  1. Preparation of Contractor's Construction Schedule.
  2. Preparation of the Schedule of Values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Pre-installation conferences.
  7. Project closeout activities.
  8. Startup and adjustment of systems.
  9. Project closeout activities.

### 13.5 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
  1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
    - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - b. Indicate required installation sequences.
    - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Engineer for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
  2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
  3. Number of Copies: Submit seven opaque copies of each submittal. Engineer will return one copy.

- a. Submit seven copies where Coordination Drawings are required for operation and maintenance manuals. Engineer will retain three copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.
4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
- B. Key Personnel Names: At least 15 calendar days to starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
  1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

#### 13.6 PROJECT MEETINGS

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

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

- w. Required performance results.
  - x. Protection of adjacent work.
  - y. Protection of construction and personnel.
- 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.
- 1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      - 1) Review schedule for next period.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Off-site fabrication.
      - 6) Access.
      - 7) Site utilization.
      - 8) Temporary facilities and controls.
      - 9) Work hours.
      - 10) Hazards and risks.
      - 11) Progress cleaning.
      - 12) Quality and work standards.
      - 13) Status of correction of deficient items.
      - 14) Field observations.
      - 15) RFIs.



- 16) Status of proposal requests.
  - 17) Pending changes.
  - 18) Status of Change Orders.
  - 19) Pending claims and disputes.
  - 20) Documentation of information for payment requests.
3. Minutes: Engineer will record and distribute to Contractor the meeting minutes.
  4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
    - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- E. Coordination Meetings: Conduct Project coordination meetings at monthly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    - c. Review present and future needs of each contractor present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Off-site fabrication.
      - 6) Access.
      - 7) Site utilization.
      - 8) Temporary facilities and controls.
      - 9) Work hours.

- 10) Hazards and risks.
- 11) Progress cleaning.
- 12) Quality and work standards.
- 13) Change Orders.

3. Reporting: Engineer or Owner will record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

### 13.7 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
  1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
  1. Project name.
  2. Project identification and tracking numbers.
  3. Date.
  4. Name of Contractor.
  5. Name of Engineer.
  6. RFI number, numbered sequentially.
  7. Specification Section number and title and related paragraphs, as appropriate.
  8. Drawing number and detail references, as appropriate.
  9. Field dimensions and conditions, as appropriate.
  10. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  11. Contractor's signature.
  12. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
    - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Hard-Copy RFIs: CSI Form 13.2A, or other industry-standard form approved as equal by Engineer.
  1. Identify each page of attachments with the RFI number and sequential page number.
- D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.

1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. Engineer's Action: Engineer will review each RFI, determine action required, and return it. Allow ten working days for Engineer's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for coordination information already indicated in the Contract Documents.
    - d. Requests for adjustments in the Contract Time or the Contract Sum.
    - e. Requests for interpretation of Engineer's actions on submittals.
    - f. Incomplete RFIs or RFIs with numerous errors.
  2. Engineer's action may include a request for additional information, in which case Engineer's time for response will start again.
  3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 1 Section "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within 10 days of receipt of the RFI response.
- F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within three days if Contractor disagrees with response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Software log with not less than the following:
1. Project name.
  2. Project identification numbers.
  3. Name and address of Contractor.
  4. Name and address of Engineer.
  5. RFI number including RFIs that were dropped and not submitted.
  6. RFI description.
  7. Date the RFI was submitted.
  8. Date Engineer's response was received.
  9. Identification of related Minor Change in the Work, Construction Change Directive, and Change Proposal Request, as appropriate.

PRODUCTS (Not Used)

EXECUTION (Not Used)

END OF SECTION 01310

**SPACE COAST REGIONAL AIRPORT  
HANGAR 52 DEMOLITION**

**INFORMATION REQUEST No. IR – \_\_\_\_\_**

SUBJECT: \_\_\_\_\_  
SPECIFICATION REF.: \_\_\_\_\_  
DRAWING REF.: \_\_\_\_\_

**DESCRIPTION:**

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

**PROPOSED SOLUTION:**

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

COMPANY NAME: \_\_\_\_\_

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

**RESPONSE:**

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

Signed by:	Date:
Engineer	_____
Signed by:	Date:
Construction Manager	_____

If this response causes any cost or time impact to your work, do not proceed; submit a Change Proposal (CP) for changes in Contract Sum and/or Time within fifteen (15) days. If this response indicates no change to the Work or a minor change to the Work consistent with the Contract Documents, indicate your acceptance of this response in the space indicated below and return a copy prior to proceeding.

Accepted by: \_\_\_\_\_  
Date: \_\_\_\_\_  
Contractor Signature

cc: ENGINEER  
CONTRACTOR  
OWNER'S REPRESENTATIVE

## PART 14 - SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION

## PART 15 - GENERAL

### 15.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

### 15.2 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Preliminary Construction Schedule.
  - 2. Contractor's Construction Schedule.
  - 3. Submittals Schedule.
  - 4. Daily construction reports.
  - 5. Material location reports.
  - 6. Field condition reports.
  - 7. Special reports.
- B. Related Sections include the following:
  - 1. Division 1 Section "Payment Procedures" for submitting the Schedule of Values.
  - 2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
  - 3. Division 1 Section "Submittal Procedures" for submitting schedules and reports.
  - 4. Division 1 Section "Photographic Documentation" for submitting construction photographs.
  - 5. Division 1 Section "Quality Requirements" for submitting a schedule of tests and inspections.

### 15.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the Schedule of Values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by Engineer.

- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
  - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
  - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- F. Major Area: A story of construction, a separate building, or a similar significant construction element.
- G. Milestone: A key or critical point in time for reference or measurement.
- H. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

#### 15.4 SUBMITTALS

- A. Qualification Data: For scheduling consultant.
- B. Submittals Schedule: Submit **seven** copies of schedule. Arrange the following information in a tabular format:
  - 1. Scheduled date for first submittal.
  - 2. Specification Section number and title.
  - 3. Submittal category (action or informational).
  - 4. Name of subcontractor.
  - 5. Description of the Work covered.
  - 6. Scheduled date for Engineer's final release or approval.
- C. Preliminary Construction Schedule: Submit seven opaque copies.
  - 1. Approval of cost-loaded preliminary construction schedule will not constitute approval of Schedule of Values for cost-loaded activities.
- D. Contractor's Construction Schedule: Submit seven opaque copies of initial schedule, large enough to show entire schedule for entire construction period.
- E. Daily Construction Reports: Submit four copies at monthly intervals.
- F. Material Location Reports: Submit four copies at monthly intervals.
- G. Field Condition Reports: Submit seven copies at time of discovery of differing conditions.

- H. Special Reports: Submit seven copies at time of unusual event.

#### 15.5 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from parties involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

### PRODUCTS

#### 15.6 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
  - 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
  - 2. Initial Submittal: Submit concurrently with preliminary bar-chart schedule. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
    - a. At Contractor's option, show submittals on the Preliminary Construction Schedule, instead of tabulating them separately.
  - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

#### 15.7 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.
  - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each phase or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 30 days, unless specifically allowed by Engineer.
  2. Procurement Activities: Include procurement process activities for any long lead items and major items, requiring a cycle of more than 30 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
    - a. Performance Grade (PG) of asphalt.
    - b. Aggregate gradation for asphalt and P-209 Crushed Aggregate.
    - c. Signs or other hardware related to electrical pieces of the scope.
  3. Submittal Review Time: Include review and re-submittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
  4. Startup and Testing Time: Include not less than three days for startup and testing.
  5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Engineer's administrative procedures necessary for certification of Substantial Completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
- a. None noted by the County.
  2. Work Restrictions: Show the effect of the following items on the schedule:
    - a. Coordination with existing construction.
    - b. Limitations of continued occupancies.
    - c. Uninterruptible services.
    - d. Partial occupancy before Substantial Completion.
    - e. Use of premises restrictions.
    - f. Provisions for future construction.
    - g. Seasonal variations.
    - h. Environmental control.
  3. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
    - a. Subcontract awards.
    - b. Submittals.
    - c. Purchases.
    - d. Sample testing.
    - e. Deliveries.
    - f. Installation.
    - g. Tests and inspections.
    - h. Startup and placement into final use and operation.
  4. Other Constraints: Separate and Identify Work by project elements and areas within the Terminal Area.
    - a. Project elements are headings of work described in the Bid Submittal Form and Instructions to Bidders.



- b. Named work areas in the Project Area include, but are not limited to:
  - 1) Runway 11-29
- c. Show expected Busy Periods for Airline Activities, as defined by Owner at Preconstruction Conference
  - 1) Summer break – June 1 to August 31
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion, and the following interim milestones:
  - 1. Begin and end dates for phases of work within named work areas
  - 2. Completion of grouped phases relating to opening or closing the taxiways
  - 3. Closing and opening of the perimeter access road
- E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragments to demonstrate the effect of the proposed change on the overall project schedule.

#### 15.8 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule at least **fourteen days prior** to date established for the Pre-Construction Conference.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first **90** days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

#### 15.9 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within ten (10) days of receiving comments from the Engineer. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
  - 1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in five percent increments within time bar.

#### 15.10 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
  - 1. List of subcontractors at Project site.
  - 2. List of separate contractors at Project site.

3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (refer to special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial Completions and occupancies.
19. Substantial Completions authorized.

- B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

#### 15.11 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within 24 hours of an occurrence. Distribute copies of report to parties affected by the occurrence. Distribute copy of special reports to Engineer and Resident Project Representative.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, and response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

### EXECUTION

#### 15.12 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Engineer, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01320

PART 16 - SECTION 01322 - PHOTOGRAPHIC DOCUMENTATION

PART 17 - GENERAL

17.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

17.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
  - 3. Final Completion construction photographs.
- B. Related Sections include the following:
  - 1. Division 1 Section "Submittal Procedures" for submitting photographic documentation.
  - 2. Division 1 Section "Selective Demolition" for photographic documentation before selective demolition operations commence.
  - 3. Division 1 Section "Closeout Procedures" for submitting digital media as Project Record Documents at Project closeout.

17.3 SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Include same label information as corresponding set of photographs.
- B. Construction Photographs: Submit digital copies, or three prints at Contractor's option, of each photographic view **within five days** of taking photographs.
  - 1. Digital Images: Submit a complete set of digital image electronic files on CD-ROM. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, un-cropped.
  - 2. Optional Format for Printed Submittals: 8-by-10-inch smooth-surface matte prints on single-weight commercial-grade photographic paper, enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.
  - 3. Identification: Include digital information 'tag' linked to each image, or on back of each print provide an applied label or rubber-stamped impression with the following information:
    - a. Name of Project.
    - b. Name and address of photographer.
    - c. Name of Engineer.
    - d. Name of Contractor.

- e. Date photograph was taken if not date stamped by camera.
- f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
- g. Unique sequential identifier.

#### 17.4 COORDINATION

- A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

#### 17.5 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

### PRODUCTS

#### 17.6 PHOTOGRAPHIC MEDIA

- A. Optional Photographic Film: 35 mm, medium speed (ISO 100-200).
- B. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1024 by 768 pixels.

### EXECUTION

#### 17.7 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Optional Film Images:
  - 1. Date Stamp: Date and time stamp each photograph as it is being taken so stamp is integral to photograph.
  - 2. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times for reference. Identify photographs same as for those submitted to Engineer.

- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in filename for each image.
  - 2. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Engineer.
- D. Preconstruction Photographs: Before starting construction, take color, digital photographs of Project site and surrounding areas, including existing items to remain during construction, from different vantage points, as directed by Engineer.
  - 1. Flag construction limits before taking construction photographs.
- E. Periodic Construction Photographs: Take 8 colored, digital photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Final Completion Construction Photographs: Take 8 colored, digital photographs after date of Substantial Completion for submission as Project Record Documents. Engineer will direct photographer for desired vantage points.

END OF SECTION 01322

## PART 18 - SECTION 01330 - SUBMITTAL PROCEDURES

## PART 19 - GENERAL

### 19.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

### 19.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Sections include the following:
  - 1. Division 1 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
  - 2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
  - 3. Division 1 Section "Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
  - 4. Division 1 Section "Photographic Documentation" for submitting construction photographs.
  - 5. Division 1 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
  - 6. Division 1 Section "Closeout Procedures" for submitting warranties.
  - 7. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 8. Division 1 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
  - 9. Division 1 Section "Demonstration and Training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.
  - 10. Division 2 for specific requirements for submittals in those Sections.

### 19.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Engineer's responsive action.
- B. Informational Submittals: Written information that does not require Engineer's responsive action. Submittals may be rejected for not complying with requirements.

#### 19.4 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will **not** be provided by Engineer for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
  - 1. Initial Review: Allow **21** days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
  - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  - 3. Resubmitted Review: Allow **15** days for review of each resubmitted.
  - 4. Sequential Review: Where sequential review of submittals by Engineer's consultants, Owner, or other parties is indicated, allow **28** days for initial review of each submittal.
    - a. Safety and Security Plans
    - b. Phasing and Staging Plans
    - c. Asphalt and base course aggregate gradation
    - d. Asphalt Performance Grade (PG) test results
    - e. Signs or other hardware outlined on the electrical drawings
- E. Identification: Place a permanent label or title block on each submittal for identification.
  - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
  - 2. Provide a space approximately **6 by 4 inches** on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
  - 3. Include the following information on label for processing and recording action taken:



- a. Project name.
  - b. Project Identification Numbers – to include project number assigned by Federal Aviation Administration or Department of Transportation, State Department of Transportation, Pinellas County Purchasing Department, Pinellas County Building Development Review Services, Airport Contract Number, Engineer's project number and/or respective Engineer's project number.
  - c. Date.
  - d. Name and address of Engineer.
  - e. Name and address of Contractor.
  - f. Name and address of subcontractor.
  - g. Name and address of supplier.
  - h. Name of manufacturer.
  - i. Submittal number or other unique identifier, including revision identifier.
    - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).
  - j. Number and full title of appropriate Specification Section.
  - k. Drawing number and detail references, as appropriate.
  - l. Location(s) where product is to be installed, as appropriate.
  - m. Other necessary identification.
- F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- 1. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.
- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will return submittals, without review, received from sources other than Contractor.
- 1. Transmittal Form: Provide locations on form for the following information:
    - a. Project name.
    - b. Date.
    - c. Destination (To:).
    - d. Source (From:).
    - e. Names of subcontractor, manufacturer, and supplier.
    - f. Category and type of submittal.
    - g. Submittal purpose and description.
    - h. Specification Section number and title.
    - i. Drawing number and detail references, as appropriate.
    - j. Transmittal number.
    - k. Submittal and transmittal distribution record.
    - l. Remarks.
    - m. Signature of transmitter.

2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- I. Re-submittals: Make re-submittals in same form and number of copies as initial submittal.
    1. Note date and content of previous submittal.
    2. Note date and content of revision in label or title block and clearly indicate extent of revision.
    3. Resubmit submittals until they are marked "No Exceptions."
  - J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
  - K. Use for Construction: Use only final submittals with mark indicating "No Exceptions" taken by Engineer.
- 19.5 CONTRACTOR'S USE OF ENGINEER'S CAD FILES
- A. General: Electronic copies of CAD Drawings of the Contract Drawings will **not** be provided by Engineer for Contractor's use in preparing submittals.

## PRODUCTS

- 19.6 ACTION SUBMITTALS
- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
  - B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
    1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
    2. Mark each copy of each submittal to show which products and options are applicable.
    3. Include the following information, as applicable:
      - a. Manufacturer's written recommendations.
      - b. Manufacturer's product specifications.
      - c. Manufacturer's installation instructions.
      - d. Standard color charts.
      - e. Manufacturer's catalog cuts.
      - f. Wiring diagrams showing factory-installed wiring.
      - g. Printed performance curves.

- h. Operational range diagrams.
    - i. Mill reports.
    - j. Standard product operation and maintenance manuals.
    - k. Compliance with specified referenced standards.
    - l. Testing by recognized testing agency.
    - m. Application of testing agency labels and seals.
    - n. Notation of coordination requirements.
  - 4. Submit Product Data before or concurrent with Samples.
  - 5. Number of Copies: Submit not less than seven copies of Product Data, unless otherwise indicated. Engineer will keep three copies for most submittals, four copies for submittals involving consulting engineering or design professionals, and will return **two** copies with comments, and any additional copies without comments attached. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shop work manufacturing instructions.
    - g. Templates and patterns.
    - h. Schedules.
    - i. Design calculations.
    - j. Compliance with specified standards.
    - k. Notation of coordination requirements.
    - l. Notation of dimensions established by field measurement.
    - m. Relationship to adjoining construction clearly indicated.
    - n. Seal and signature of professional engineer if specified.
    - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
  - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
  - 3. Number of Copies: Submit two opaque (bond) copies of each submittal. Engineer will return one copy.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
  - 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of appropriate Specification Section.
    - e. Project name.
    - f. Proposed location, or use, in project.
  3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.
      - 1) Submit one full set to the office of the Engineer.
      - 2) Submit one full set on-site to the designated Owner's Representative.
  5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    - a. Number of Samples: Submit not less than **three** sets of Samples. Engineer will retain **two** Sample sets; remainder will be returned.
      - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product.
  2. Number and name of room or space.
  3. Location within room or space.
  4. Number of Copies: Submit five copies of product schedule or list, unless otherwise indicated. Engineer will return two copies.
    - a. Mark up and retain one returned copy as a Project Record Document.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation" for Construction Manager's action.
- G. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."
- H. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures."
- I. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures."
- J. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Drawing number and detail references, as appropriate, covered by subcontract.
  4. Number of Copies: Submit five copies of subcontractor list, unless otherwise indicated. Engineer will return two copies.
    - a. Mark up and retain one returned copy as a Project Record Document.
- K. Miscellaneous:
1. Weekly Payrolls:
    - a. In accordance with Section 130 of the General Provisions submit certified weekly payrolls for prime contractor and all subcontractors working at project site.
    - b. Submit payrolls no later than 7 calendar days after pay period. Payrolls will be considered current if received within 10 calendar days after last workday of payroll workweek. A workweek is the seven day period between midnight Sunday and midnight the following Sunday.
    - c. The Contractor is responsible for submission of payrolls by his subcontractors.
    - d. Submit a typed summary sheet with each payroll submission listing by week when contractor and each subcontractor worked at site.
    - e. A payroll submission is only required for weeks when Contractor or subcontractor is actually working at the site.
  2. EEO Reports:
    - a. Contractor shall submit Monthly Employment Utilization Report and Annual EEO-1 Report to the appropriate Federal Labor Area Office in

accordance with Section 120 of the General Provisions. Submit copy of submittal to Owner for his records.

- b. Prime Contractor shall insure that all his first tier subcontractors submit these reports and shall submit a sworn statement to Owner monthly certifying that all subcontractor reports have been submitted as required.
3. DBE Expenditure Reports: With each application for payment, the Contractor shall submit his DBE expenditure report indicating the name, date and amount disbursed to his DBE subcontractors for the period as well as for the project to date expenditure.

#### 19.7 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
  1. Number of Copies: Submit seven copies of each submittal, unless otherwise indicated. Engineer will not return copies.
  2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."
- C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of engineers and owners, and other information specified.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - 1. Name of evaluation organization.
  - 2. Date of evaluation.
  - 3. Time period when report is in effect.
  - 4. Product and manufacturers' names.
  - 5. Description of product.
  - 6. Test procedures and results.
  - 7. Limitations of use.
- M. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."
- N. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- O. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- P. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- Q. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."
- R. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

- S. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
  - 1. Preparation of substrates.
  - 2. Required substrate tolerances.
  - 3. Sequence of installation or erection.
  - 4. Required installation tolerances.
  - 5. Required adjustments.
  - 6. Recommendations for cleaning and protection.
- T. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
  - 1. Name, address, and telephone number of factory-authorized service representative making report.
  - 2. Statement on condition of substrates and their acceptability for installation of product.
  - 3. Statement that products at Project site comply with requirements.
  - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 6. Statement whether conditions, products, and installation will affect warranty.
  - 7. Other required items indicated in individual Specification Sections.
- U. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- V. Construction Photographs: Comply with requirements specified in Division 1 Section "Photographic Documentation."
- W. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Engineer.
  - 1. Engineer will not review submittals that include MSDSs and will return the entire submittal without comment.

#### 19.8 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.



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

## EXECUTION

### 19.9 CONTRACTOR'S REVIEW

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

### 19.10 ENGINEER'S ACTION

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
  - 1. "No Exceptions" – Engineer has reviewed the submittal and approved that it generally conforms to the referenced specification(s) and drawings.
  - 2. "Exceptions Noted" – Engineer has reviewed the submittal and observed discrepancies in conformance to the referenced specification(s) and drawings; Engineer's comments shall be incorporated prior to fabrication. Contractor shall modify and re-submit number of corrected copies requested as record documents.
  - 3. "Revise and Resubmit" – The submittal was found to be unacceptable, and the Engineer has noted discrepancies with the Contract Documents. The Contractor shall respond to the noted discrepancies and shall revise the submittal to conform to the specification(s) and drawings before proceeding further.
  - 4. "Rejected" – The submittal is unacceptable. Contractor shall review the Contract Documents and prepare a submittal that conforms to the specifications and drawings.

- C. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01330

PART 20 - SECTION 01400 - QUALITY REQUIREMENTS AND TESTING LABORATORY SERVICES

PART 21 - GENERAL

21.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

21.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
  - 1. Division 1 Section "Allowances" for testing and inspecting allowances.
  - 2. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
  - 3. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
  - 4. Division 2 for specific test and inspection requirements, for descriptions of respective certificates of products, and for lists describing tests and standards.
  - 5. Division 1 Section "Sustainable Design Requirements-LEED for New Construction and Major Renovations."

21.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by a NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- J. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of (3) **three** previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

#### 21.4 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

## 21.5 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the **most stringent** requirement. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

## 21.6 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Description of test and inspection.
  - 3. Identification of applicable standards.
  - 4. Identification of test and inspection methods.
  - 5. Number of tests and inspections required.
  - 6. Time schedule or time span for tests and inspections.
  - 7. Entity responsible for performing tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit 5 certified written reports that include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data, including type.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- D. Testing Laboratory: Prepare and submit 5 copies of the following to be included with the Reports indicated above:

1. Certificate(s) of Calibration, made by accredited calibration agency.
  2. Written reports on irregularities, deficiencies and/or re-tests (color-coded as per Article 1.8 following).
  3. Reports on inspections and tests.
  4. Copy of report of inspection of facilities made by Materials Reference Laboratory of National Bureau of Standards during most recent tour of inspection; with memorandum of remedies of any deficiencies reported by inspection.
- E. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.
- F. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

#### 21.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: Meet “Recommended Requirements for Independent Laboratory Qualification”, latest edition, published by American Council of Independent Laboratories.
  1. Testing Equipment:
    - a. Calibrated at maximum twelve (12) month intervals by devices of accuracy traceable to either:
      - 1) National Bureau of Standards.
      - 2) Accepted values of natural physical constants.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
  1. Build mockups in location and of size indicated or, if not indicated, as directed by Engineer.
  2. Notify Engineer twenty-one (21) days in advance of dates and times when mockups will be constructed.
  3. Demonstrate the proposed range of aesthetic effects and workmanship.
  4. Obtain Engineer's approval of mockups before starting work, fabrication, or construction.
    - a. Allow twenty-one (21) days for initial review and fifteen (15) days for each re-review of each mockup.
  5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  6. Demolish and remove mockups when directed, unless otherwise indicated.

## 21.8 QUALITY CONTROL

- A. Contractor Responsibilities: Contractor is responsible for quality control testing and inspection to insure the quality of his means and methods of construction will produce the specified quality of work, and for any tests and inspections required by regulatory agencies. Costs for these services shall be included in the contract sum.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  2. The Contractor shall submit for Engineer's approval a Quality Control (QC) Plan delineating his methods for each item requiring inspections, tests, and similar services.
  3. Notify testing agencies at least 72 hours in advance of time when Work that requires testing or inspecting will be performed.
  4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."
- D. Retesting/Reinspecting:
1. Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
  2. Retest Responsibility: Where results of required inspections, tests, or similar services prove unsatisfactory and do not indicate compliance with the requirements of the Contract Documents, then retests are the responsibility of the Contractor, and shall be deducted from monies due the Contractor on his monthly pay request, regardless of whether the original test was the Contractor's responsibility. Retesting of work revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original work.
- E. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. On notice, provide qualified personnel to perform required tests and inspections.
1. Perform specified inspections, sampling and testing of materials.
    - a. Comply with specified standards.
    - b. Ascertain compliance with requirements of Contract Documents.
  2. Promptly notify Engineer and Contractor of irregularities or deficiencies observed in the Work during performance of its services.
    - a. Deficient work shall be reported and printed on Yellow paper.
    - b. Re-tests shall be reported and printed on Blue paper.



3. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  4. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  5. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  6. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  7. Do not perform any duties of Contractor.
  8. Perform additional services requested by Engineer.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel and scheduling of tests. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Required quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Furnish copies of all test reports as called for by the Specifications.
  5. Furnish labor and facilities:
    - a. To provide access to work to be tested.
    - b. To obtain and handle samples at the site.
    - c. To facilitate inspections and tests.
    - d. Test cylinder cure box for laboratory's exclusive use for storage and curing of test samples.
  6. Arrange with Laboratory and pay for additional samples and tests required for Contractor's convenience.
  7. Employ and pay for services of a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing required when initial tests indicate work does not comply with Contract Documents. See Article above for additional requirements regarding re-testing and/or re-inspection.
  8. Facilities for storage and field curing of test samples.
  9. Delivery of samples to testing agencies.
  10. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  11. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 45 days of date established for the Notice to Proceed.

1. Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

## 21.9 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
  1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
  2. Notifying Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  3. Submitting a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.
  4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  6. Retesting and reinspecting corrected work.

## PRODUCTS (Not Used)

## EXECUTION

### 21.10 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
  1. Date test or inspection was conducted.
  2. Description of the Work tested or inspected.
  3. Date test or inspection results were transmitted to Engineer.
  4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

### 21.11 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  1. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."

- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

## PART 22 - SECTION 01600 - MATERIALS AND EQUIPMENT

## PART 23 - GENERAL

### 23.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

### 23.2 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
  - 1. Division 1 Section "Allowances" for products selected under an allowance.
  - 2. Division 1 Section "Alternates" for products selected under an alternate.
  - 3. Division 1 Section "Closeout Procedures" for submitting warranties for Contract closeout.
  - 4. Division 2 for specific requirements for warranties on products and installations specified to be warranted.

### 23.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

#### 23.4 REQUIREMENTS:

- A. Material, Equipment, and Products Incorporated Into the Work shall conform to applicable specifications and standards; shall comply with size, make, type and quality specified, or as specifically approved in writing by the Engineer; and shall not be used for any purpose other than that for which it is designed or is specified.
- B. Manufactured and Fabricated Products shall be designed, fabricated and assembled in accordance with the best engineering and shop practices. Like parts of duplicate units shall be manufactured to standard sizes and gages, to be interchangeable. Products shall be suitable for service conditions. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless Engineer specifically approves variations in writing.
- C. Standardization: Unless otherwise approved by the Engineer, items and equipment of a similar type and function shall be furnished by one manufacturer to standardize on replacement parts, service calls, operation and maintenance matters, and to avoid a division of responsibility among several manufacturers.
- D. A single supplier shall be used on principal items of equipment and systems where one or more components are not manufactured by the principal supplier; this is required to place performance and service responsibilities for the entire unit or system with only one supplier or manufacturer.

#### 23.5 SUBMITTALS

- A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
  - 1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
  - 2. Form: Tabulate information for each product under the following column headings:
    - a. Specification Section number and title.
    - b. Generic name used in the Contract Documents.
    - c. Proprietary name, model number, and similar designations.
    - d. Manufacturer's name and address.
    - e. Supplier's name and address.
    - f. Installer's name and address.
    - g. Projected delivery date or time span of delivery period.
    - h. Identification of items that require early submittal approval for scheduled delivery date.

3. Initial Submittal: Within fifteen (15) days after date of Pre-Construction Conference, submit three copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
  - a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
4. Completed List: Within thirty (30) days after date of Pre-Construction Conference, submit five copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
5. Engineer's Action: Engineer will respond in writing to Contractor within 15 days of receipt of completed product list. Engineer's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Engineer's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

- B. Product Substitutions: Contractor shall submit, at the Preconstruction Conference, all requests for product substitutions. No requests for substitutions will be accepted from manufacturers or suppliers.

Submit a separate written request for each product, supported with complete data, with drawings and samples as appropriate, including:

1. Substitution Request Form: Use form enclosed in the specifications; included at end of this section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
  - a. Statement indicating why specified material or product cannot be provided.
  - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
  - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. List of similar installations for completed projects with project names and addresses and names and addresses of engineers and owners.
  - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
  - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter

- from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
- j. Cost information, including a proposal of change, if any, in the Contract Sum.
  - 1) Include cost data comparing the proposed substitution with the product specified.
- k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
- l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
- m. Any required license fees or royalties.
- n. Availability of maintenance service, and source of replacement materials.

Engineer shall be the judge of the equality and acceptability of the proposed substitution. If Engineer determines the proposed substitute product is not "equal" to the specified product, the Contractor must provide the specified product, subject to Engineer's shop drawing review and approval.

No further requests for substitutions will be considered after Preconstruction Conference.

- C. Contractor's Representation: A request for a substitution constitutes a representation that Contractor:
  - 1. Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified.
  - 2. Will provide the same warranties or bonds for the substitution as for the product specified.
  - 3. Will coordinate the installation of an accepted substitution into the work, and make such other changes as may be required to make the work complete in all respects.
  - 4. Waives all claims for additional costs, under his responsibility, which may subsequently
- D. Engineer's Review: Engineer will review requests for substitutions with reasonable promptness and notify Contractor, in writing, of the decision to accept or reject the requested substitution.
- E. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within ten days of receipt of a comparable product request. Engineer will notify Contractor of approval or rejection of proposed comparable product request within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Division 1 Section "Submittal Procedures."

- b. Use product specified if Engineer cannot make a decision on use of a comparable product request within time allocated.

- F. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

#### 23.6 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

#### 23.7 MANUFACTURER'S INSTRUCTIONS:

- A. Printed Instructions: When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, Contractor shall obtain and distribute copies of such instructions to parties involved in the installation, including copies to Engineer. Maintain one set of complete instructions at the job site during installation and until completion and acceptance.
- B. Strict Compliance: Handle, install, connect, clean, condition, and adjust products in strict accord with such instructions and in conformity with specified requirements. Should job conditions or specified requirements conflict with manufacturer's instruction, consult with Engineer for further instructions. Do not proceed with work without clear instructions.
- C. Complete Compliance: Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

#### 23.8 TRANSPORTATION AND HANDLING:

- A. Deliver and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Deliveries: Contractor shall arrange deliveries of products in accord with construction schedules; coordinate to avoid conflict with work and conditions at the site. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible, and complete with instructions for handling, storing, unpacking, protecting, and installing. Immediately on delivery, inspect shipments to assure compliance with requirements of contract documents and approved submittals, and that products are properly protected and undamaged.
  - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.



- C. Handling: Provide equipment and personnel to handle products by methods to prevent soiling or damage of products or packaging.

#### 23.9 STORAGE AND PROTECTION:

- A. Store products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Storage: Store products in accord with manufacturer's instructions, with seals and labels intact and legible. Store products subject to damage by the elements in weather tight enclosures. Maintain temperature and humidity within the ranges required by manufacturer's instructions. Comply with product manufacturer's written instructions for ventilation and weather-protection requirements for storage.
- C. Exterior Storage: Store fabricated products above the ground, on blocking or skids; prevent soiling or staining. Cover products, which are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.

Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

- D. Storage Inspection: Arrange storage in a manner to provide easy access for inspection and measurement of quantity or counting of units. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- E. Protection After Installations: Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.
- F. Store products in a manner that will not endanger Project structure.
- G. Store cementitious products and materials on elevated platforms.
- H. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
- I. Protect stored products from damage and liquids from freezing.

#### 23.10 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  - 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
  3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

## PRODUCTS

### 23.11 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Engineer will coordinate selection with Owner.
  5. Where products are accompanied by the term "match sample," sample to be matched is Engineer's.
  6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
    - a. Where Work is to match existing products or installations, Engineer has endeavored to identify requirements in other Sections of the Specifications or on the Drawings. Contractor shall identify and highlight any deviation or modifications from named products or manufacturers in Completed Product List.

2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Engineer's sample. Engineer's decision will be final on whether a proposed product matches.
  - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, and textures" or a similar phrase, select a product that complies with other specified requirements.
  - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
  - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.
11. Airport lighting equipment covered by FAA specifications require certification under the Airport Lighting Equipment Certification Program described in Advisory Circular 150/5345-53, latest edition. Select equipment from the

Certified Airport Lighting Equipment list appended to the Advisory Circular.  
An updated list is published biannually.

#### 23.12 PRODUCT SUBSTITUTIONS

- A. Timing: Engineer will consider requests for substitution if received within 30 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Engineer.
- B. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:
  - 1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  - 2. Requested substitution does not require extensive revisions to the Contract Documents.
  - 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - 4. Substitution request is fully documented and properly submitted.
  - 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
  - 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - 7. Requested substitution is compatible with other portions of the Work.
  - 8. Requested substitution has been coordinated with other portions of the Work.
  - 9. Requested substitution provides specified warranty.
  - 10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

#### 23.13 COMPARABLE PRODUCTS

- A. Conditions: Engineer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:
  - 1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of engineers and owners, if requested.
5. Samples, if requested.

EXECUTION (Not Applicable)

END OF SECTION 01600

## SUBSTITUTION REQUEST FORM

Substitution Request Number: \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
General Contractor: \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_  
Engineer's Project No.: \_\_\_\_\_  
Specification Section: \_\_\_\_\_  
Paragraph Number: \_\_\_\_\_  
Original Product Specified: \_\_\_\_\_  
Proposed Product Substitution: \_\_\_\_\_  
General reason for not giving priority to Specified Items: \_\_\_\_\_

### Answer the following questions:

**Circle One**

- |   |                                    |                                      |
|---|------------------------------------|--------------------------------------|
| • Are extensive revisions to contract documents required?   | Yes                                | No                                   |
| • Proposed changes are in keeping with general intent of Contract Documents?  | Yes                                | No                                   |
| • Substitution affects other materials or systems?  | Yes                                | No                                   |
| (If yes, attach complete data)  |                                    |                                      |
| • Substitution requires dimensional revision or redesign of structure or MEP work?  | Yes                                | No                                   |
| (If yes, attach complete data)  |                                    |                                      |
| • Comparison of two products is <u>attached</u> to demonstrate equality of products?  | Yes                                | No                                   |
| (Original specified item versus proposed substitution)  |                                    |                                      |
| • The following data is furnished herewith for evaluation of the substitution:  |                                    |                                      |
| <input type="checkbox"/> Catalog Data Sheets  | <input type="checkbox"/> Drawings  | <input type="checkbox"/> Reports     |
| <input type="checkbox"/> Samples  | <input type="checkbox"/> Test Data | <input type="checkbox"/> Other _____ |
| • Are there any schedule impacts if the original product specified is used?   | Yes                                | No                                   |
| (If yes, please indicate the number of calendar days: _____)  |                                    |                                      |
| • Scheduled delivery date of original product: ____ / ____ / ____.  |                                    |                                      |
| • Scheduled delivery date of proposed substitution: ____ / ____ / ____ . Days saved ____)   |                                    |                                      |
| • Is the original product acceptable to local building officials?   | Yes                                | No                                   |
| (If no, please fill in data below)  |                                    |                                      |
| Contact at Building Department:   |                                    |                                      |
| Phone: (     ) -     Ext.     Fax: (     ) -     -  |                                    |                                      |
| • Are there any savings that will accrue to the Owner for use of the proposed substitution?   | Yes                                | No                                   |
| (If yes, please indicate amount: \$ _____)  |                                    |                                      |
| • Are there any life cycle costs savings that will accrue to the Owner for use of the proposed substitution? (If yes, please indicate amount: \$ _____) | Yes                                | No                                   |
| • Are there any additional costs that will be incurred by the Owner?  | Yes                                | No                                   |
| (If yes, identify cost impact: \$ _____)  |                                    |                                      |
| • Are there any additional costs that will be incurred by other trade contractors?  | Yes                                | No                                   |
| (If yes, identify total cost impact: \$ _____)  |                                    |                                      |
| • Is the specified product or material compatible with other products or materials scheduled or specified to be installed?                              | Yes                                | No                                   |
| • Is the proposed substitution compatible with other materials scheduled or specified to be installed?  | Yes                                | No                                   |

- Can the specified product or material be installed and coordinated with the installation of other products or materials specified to be installed? Yes No
- What is the warranty period for the originally specified product? Labor (Yrs) Material (Yrs)
- What is the warranty period for the proposed substitution? Labor (Yrs) Years (Yrs)

By signature below the Contractor and/or Subcontractor proposing the material or product substitution hereby certify that the above noted information is true and accurate. The Contractor and/or subcontractor further certify that each of them waiver their rights to additional payment or time, that may subsequently become necessary because of failure of the substitution to perform adequately. **THE CONTRACTOR AND SUBCONTRACTOR HEREBY FURTHER CERTIFY THAT THIS SUBMISSION HAS BEEN FULLY CHECKED AND COORDINATED WITH THE CONTRACT DOCUMENTS.**

<hr/>	<hr/>
(Subcontractor's Signature)	(Date)
<hr/>	
(Printed Subcontractors Name)	
<hr/>	<hr/>
(Contractor's Signature)	(Date)
<hr/>	
(Printed Contractor's Name)	

**ENGINEER'S ACTION AND/OR REVIEW COMMENTS:**

The proposed Substitution Request has been reviewed for compliance with the Design Intent of the Contract Documents by the Engineer, in accordance with the General and Supplementary Conditions of the Contract; However, this review shall not relieve the Contractor or the sub-contractor of their duties and responsibilities under the terms of the Contract, and/or the coordination and product incorporation provisions certified by the Contractor and sub-contractor above. The proposed Substitution shall **not** be incorporated into the project unless the marked accepted and Engineer's acceptance is acknowledged by the Owner. The Engineer's Review Comments and Response are as follows:

- |   |  |
|---|--|
| <input type="checkbox"/> Rejected; not accepted | <input type="checkbox"/> Accepted as noted below             |
| <input type="checkbox"/> Revise and resubmit    | <input type="checkbox"/> Additional Review Comments Attached |
| <input type="checkbox"/> Accepted               | <input type="checkbox"/> _____                               |

<hr/>	<hr/>
(Engineer's Signature)	(Date)
<hr/>	
(Printed Engineer's Name)	

**ACKNOWLEDGEMENT OF SUBSTITUTION REQUEST BY OWNER:**

<hr/>	<hr/>
(Signature)	(Date)

(Printed Owner's Name)  
Substitution Request Number: \_\_\_\_\_  
Project Name: \_\_\_\_\_

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

**END OF FORM**

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## SECTION 01631 – PLANS AND SPECIFICATIONS

### PART 1 - GENERAL

#### 1.0 GENERAL

- A. The plans referred to in the Contract Documents shall bear the general title of the project in a title block entitled “SPACE COAST REGIONAL AIRPORT – HANGAR 52 DEMOLITION”
- B. The title block shall indicate date, job number, sheet number and the name and address of the Engineer.

#### 1.1 COPIES FURNISHED TO THE CONTRACTOR

- A. After the contract has been executed, the Contractor will be furnished one set of reproduces and a license to reproduce the contract documents as necessary to complete the work of this project. The cost of all reproduction under this license shall be paid for by the Contractor.
- B. The Contractor shall furnish each of the subcontractors, manufacturers, and materials suppliers such copies of the Contract Documents as may be required for his work.

#### 1.2 SUPPLEMENTARY DRAWINGS

- A. When, in the opinion of the Engineer, it becomes necessary to explain more fully the work to be done or to illustrate the work further, or to show any changes, which may be required, drawings shown as Supplementary Drawings, with specifications pertaining thereto, will be prepared and the prints thereof will be given to the Contractor.
- B. The Supplementary Drawings shall be binding upon the Contractor with the same force as the plans. Where such Supplementary Drawings require either more or less than the estimated quantities of work, credit to the Owner or compensation therefore to the Contractor shall be subject to the terms of the agreement and the appropriate change order, for the values involved, executed.
- C. The Contractor shall verify all dimensions and quantities, and details shown on the plans. Supplementary Drawings, Schedules, or other data supplied to the Contractor through the office of the Engineer shall notify him of all errors, omissions, conflicts, and discrepancies found therein. Failure to discover or correct errors, conflicts, or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory work, faulty construction, or improper operation resulting there from nor from rectifying such conditions at his own expense. He will not be allowed to take advantage of any error or omission, as full instructions will be furnished by the Engineer, should such error or omission be discovered. All schedules are given for the convenience of the Engineer and Contractor and are not guaranteed to be complete. The Contractor shall assume responsibility for the making of estimates of the size, kind, and quantity of materials and equipment included in work to be done under the contract.

### 1.3 CONTRACT DOCUMENTS

- A. Should the drawings disagree in themselves or with the specifications, the Contractor shall provide the better quality or greater quantity of work or materials unless further review of evidence by the Owner clarifies the intent.
- B. Any conflicts between drawings or specifications and codes shall be brought to the attention of the Engineer in writing before installation. Specific code and paragraph shall be cited and in the case of local codes, the appropriate excerpt of code shall be included. No extra compensation will be allowed for code compliance. Where drawings and specifications indicate more stringent requirements or higher quality than code requires, the drawings and specifications shall prevail.
- C. The Engineer affirms that to the best of his knowledge at the time of design, the applicable codes and ordinances constitute all legally adopted requirements governing the work described by these plans and specifications.
  - 1. That to the best of his knowledge the work described herein has been designed in full compliance with applicable codes and ordinances and with interpretations historically rendered by the governing agency indicated.
  - 2. That it is the responsibility of said governing authority to fully review these plans and specifications for code compliance prior to permitting construction of this Work in accordance with state statutes.
  - 3. The Engineer of record does not accept any responsibility or liability for changes in the Work required for compliance with codes and/or ordinances as a result of changes in interpretation rendered by said governing authority, either of which occurring after issuance of permit for construction of this work.

END OF SECTION 01631

## PART 24 - SECTION 01700 - EXECUTION REQUIREMENTS

### PART 25 - GENERAL

#### 25.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 25.2 SUMMARY

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

#### 25.3 DEFINITIONS

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

#### 25.4 INFORMATIONAL SUBMITTALS

- A. Cutting and Patching Plan: Submit plan describing procedures at least 21 days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
  2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
  3. Products: List products to be used for patching and firms or entities that will perform patching work.
  4. Dates: Indicate when cutting and patching will be performed.
  5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
    - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

## 25.5 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, notify Engineer of locations and details of cutting and await directions from Engineer before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
  2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results increased maintenance or decreased operational life or safety. Operational elements include the following:
    - a. Primary operational systems and equipment.
    - b. Fire separation assemblies.
    - c. Air or smoke barriers.
    - d. Fire-suppression systems.
    - e. Mechanical systems piping and ducts.
    - f. Control systems.
    - g. Communication systems.
    - h. Fire-detection and -alarm systems.
    - i. Conveying systems.
    - j. Electrical wiring systems.
  3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

- a. Water, moisture, or vapor barriers.
  - b. Membranes and flashings.
  - c. Equipment supports.
  - d. Piping, ductwork, vessels, and equipment.
  - e. Noise- and vibration-control elements and systems.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

## PRODUCTS

### 25.6 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Engineer for the visual and functional performance of in-place materials.

## EXECUTION

### 25.7 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
  1. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator

present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

## 25.8 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Engineer according to requirements in Division 1 Section "Project Management and Coordination."
- E. Surface and Substrate Preparation: Comply with manufacturer's written recommendations for preparation of substrates to receive subsequent work.

## 25.9 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to existing benchmarks. If discrepancies are discovered, notify Engineer promptly.

1. Establish benchmarks and control points to set lines and levels as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.

- B. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Make the log available for reference by Engineer.

#### 25.10 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches in occupied spaces.

- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

- F. Tools and Equipment: Do not use tools or equipment that produces harmful noise levels.

- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.

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

#### 25.11 CUTTING AND PATCHING

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



3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
5. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

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

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

#### 25.12 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
2. Pre-installation Conferences: Include Owner's construction personnel at pre-installation conferences covering portions of the Work that are to receive Owner's work. Attend pre-installation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

#### 25.13 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  1. Remove liquid spills promptly.
  2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 1 Section "Temporary Facilities and Controls."

- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

#### 25.14 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Division 1 Section "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Division 1 Section "Quality Requirements."

#### 25.15 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

#### 25.16 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01700

## SECTION 01710 - CLEANING AND DISPOSAL

### PART 26 - GENERAL

#### 26.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 26.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Cleaning during progress of the Work and at completion of the Work.
  - 2. Disposal operations.

#### 26.3 DISPOSAL REQUIREMENTS:

- A. Conduct cleaning and disposal operations to comply with all local, state and federal codes, ordinances, regulations, and anti-pollution laws; and with airport and construction safety requirements.
- B. All disposals of waste materials shall be off airport property at locations approved by the Engineer.
- C. Contractor shall be responsible for arranging for and obtaining off-site disposal areas, including payment for all costs associated with such disposal.

#### 26.4 SUBMITTALS: Prior to beginning work, submit a Disposal Plan for the satisfactory disposal of all waste materials and debris.

Submit two (2) copies of the disposal site owner's written permission for such disposal with Disposal Plan.

### PRODUCTS

#### 26.5 MATERIALS:

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.

- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

## EXECUTION

- 26.6 **CLEANING:** Execute periodic cleaning to keep the work, site and adjacent properties free from accumulations of waste materials, rubbish, windblown debris, and dust resulting from construction operations. Provide on-site containers for the collection of waste materials, debris and rubbish. Remove waste materials, debris and rubbish from the site periodically and dispose of at approved locations.
- 26.7 **BARRIERS AND PROTECTION:** Protect existing structures and vegetation from cleaning and disposal operations as required.
- 26.8 **DUST CONTROL:** Schedule cleaning and other operations so that dust and other contaminants resulting there from will not fall on wet or newly coated surfaces, will not damage or contaminate aircraft, and will not unduly affect the work of other airport tenants.
- 26.9 **DISPOSAL OF DEBRIS AND WASTE MATERIALS:**
  - A. If permitted by Owner and local, state and federal regulations, Contractor may dispose of combustible materials on-site by burning. Unguarded fires will not be permitted. Burning will be restricted as follows:
    - 1. Burning of poison oak, poison ivy or other plants of similar nature will be prohibited.
    - 2. Tires or other combustible waste material shall not be used to augment burning.
    - 3. Burning operations that may in any way be hazardous to air operations will not be allowed.
  - B. Non-combustible and waste materials and ashes shall be removed from the site and disposed of in accordance with the Disposal Plan.
- 26.10 **PAYMENT:** No separate payment will be made under this section for work described or specified herein.

END OF SECTION 01710

## PART 27 - SECTION 01740 - WARRANTIES AND BONDS

## PART 28 - GENERAL

### 28.1 GENERAL REQUIREMENTS:

- A. Contractor shall:
  - 1. Compile specified warranties and bonds.
  - 2. Compile specified service and maintenance contracts.
  - 3. Co-execute submittals to verify compliance with Contract Documents.
  - 4. Review submittals to verify compliance with Contract Documents.
  - 5. Submit to Engineer for review and transmittal to Owner.
- B. Related requirements in other parts of the Project Manual:
  - 1. Bid Bonds: Instructions to bidders.
  - 2. Performance Bond and Payment Bond: Conditions of the contract.
  - 3. General warranty of construction: Conditions of the contract.
- C. Related requirements specified in other sections:
  - 1. Warranties and Bonds required for specific products: Each respective section of specifications.
  - 2. Provisions and duration of Warranties and Bonds: The respective section of specifications, which specifies the product.
  - 3. Contract closeout: Section 01700
  - 4. Equipment Manuals: Section 01300

## PRODUCTS (Not Used)

## EXECUTION

### 28.2 SUBMITTAL REQUIREMENTS:

- A. Assemble warranties, bonds, and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.
- B. Number of original signed copies required: Two (2) each.
- C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
  - 1. Product or work item.
  - 2. Firm, with name of principal, address and telephone number.
  - 3. Scope.
  - 4. Date of beginning of warranty, bond, or service and maintenance contract.
  - 5. Duration of warranty, bond, or service and maintenance contract.
  - 6. Provide information for Owner's personnel:
    - a. Proper procedure in case of failure.
    - b. Instances, which might affect the validity of warranty or bond.
  - 7. Contractor, name of responsible principal, address and telephone number.

28.3 FORM OF SUBMITTALS:

- A. Prepare in duplicate packets.
- B. Format:
  - 1. Size 8 1/2 inches x 11 inches. Punch sheets for 3-ring binder. Fold larger sheets to fit into binders.
  - 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
    - a. Project title and number.
    - b. Owner's name.
    - c. Contractor's name and address.
- C. Binders: Commercial quality, 3-ring, with durable and cleanable plastic covers.

28.4 TIME OF SUBMITTALS:

- A. Submit within ten (10) days after date of substantial completion, and prior to final request for payment.
- B. For items of work where acceptance is delayed materially beyond the date of substantial completion, provide updated submittal within ten (10) days after acceptance, listing the date of acceptance as the start of the warranty period.

28.5 SUBMITTALS REQUIRED: Submit warranties, bonds, and service and maintenance contracts as specified in the respective sections of specifications.

28.6 PAYMENT: No separate payment will be made under this section for work described or specified herein.

END OF SECTION 01740



## PART 29 - SECTION 01770 - CLOSEOUT PROCEDURES

## PART 30 - GENERAL

### 30.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

### 30.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Warranties.
  - 3. Final cleaning.
- B. Related Sections include the following:
  - 1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
  - 2. Division 1 Section "Photographic Documentation" for submitting Final Completion construction photographs.
  - 3. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
  - 4. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 5. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 6. Division 1 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
  - 7. Division 2 for specific closeout and special cleaning requirements for the Work in those Sections.

### 30.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

5. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
6. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
7. Complete startup testing of systems.
8. Submit test/adjust/balance records.
9. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
10. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
11. Complete final cleaning requirements, including touchup painting.
12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

#### 30.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

### 30.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit seven copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  - 3. Include the following information at the top of each page:
    - a. Project name.
    - b. Project identifying numbers.
    - c. Date.
    - d. Name of Engineer.
    - e. Name of Contractor.
    - f. Page number.

### 30.6 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

## PRODUCTS

### 30.7 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## EXECUTION

### 30.8 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - e. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - f. Sweep concrete floors broom clean in unoccupied spaces.
    - g. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
    - h. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
    - i. Remove labels that are not permanent.
    - j. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

- 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  - k. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - l. Replace parts subject to unusual operating conditions.
  - m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  - o. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

#### CLOSEOUT DOCUMENTATION

30.9 Once the Engineer has determined the work is acceptable under the Contract Documents, he will furnish the Contractor appropriate number of copies of the following forms, copies of which are attached:

1. Contractor Warranty Form
2. Contractor's Final Release and Affidavit (Exhibit G of Construction Agreement)
3. Consent of Surety for Final Payment
4. Advertisement of Completion
5. Subcontractor's Release of Liens

#### 30.10 FINAL PAYMENT REQUIREMENTS:

1. Final Release and Affidavit
2. Consent of Surety to final payment
3. Letter from contractor or his insurance company stating the commercial general liability insurance to include completed operations will remain in effect for two years following final payment.
4. Certification from surety that the performance and payment bonds will remain in effect for one year following final payment.
5. Advertisement of project completion for 4 consecutive weeks in the paper with the largest circulation where the project is being done. Certification of the advertisement.

30.11 PAYMENT: No separate payment will be made under this section for work described or specified herein.

END OF SECTION 01770

### CONTRACTOR WARRANTY FORM

PROJECT: Hangar 52 Demolition

LOCATION: SPACE COAST REGIONAL AIRPORT

OWNER:

We, \_\_\_\_\_, Contractor for the above referenced project, do hereby warrant that all labor and materials furnished and work performed are in accordance with the Contract Documents and authorized modifications thereto, and will be free from defect due to defective materials or workmanship for a period of one year from Date of Substantial Completion. This warranty commences on

\_\_\_\_\_  
(Date of Substantial Completion Affixed by Engineer)

and expires on:

\_\_\_\_\_  
(One Year From Substantial Completion Date)

This warranty covers that portion of the project described below:

Should any defect develop during the warranty period due to improper materials, workmanship or arrangement, the defect shall, upon written notice by the Owner, be made good by the Undersigned at no expense to the Owner.

Nothing in the above shall be deemed to apply to work which has been abused or neglected by the Owner.

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

For: \_\_\_\_\_

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

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

### ADVERTISEMENT OF COMPLETION

\_\_\_\_\_ (Contractor)

\_\_\_\_\_ (Address)

gives notice of completion of \_\_\_\_\_  
(Project)

and sets \_\_\_\_\_ as the date of final settlement.

All persons and firms should file all claims for payment to the below address prior to the settlement date:

Titusville-Cocoa Airport Authority  
355 Golden Knights Blvd.  
Titusville, FL 32780

By: \_\_\_\_\_ (Name)

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

Leg: \_\_\_\_\_ (Publication Dates)

**CONSENT OF SURETY  
FOR FINAL PAYMENT**

Project Name	_____
Location	_____
Project No.	_____
Contract No.	_____
Type of Contract	CONSTRUCTION
Amount of Contract	\$ _____

In accordance with the provisions of the above-named contact between the Owner and the Contractor, the following named surety:

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

on the Payment Bond of the following named Contractor:

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

hereby approves of final payment to the Contractor, and further agrees that said final payment to the Contractor shall not relieve the Surety Company named herein of any of its obligations to the following named Owner: as set forth in said Surety company's bond:

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

IN WITNESS WHEREOF, the Surety Company has hereunto set its hand and seal this \_\_\_\_ day of 20\_\_\_\_\_.

\_\_\_\_\_  
(Name of Surety Company)

\_\_\_\_\_  
(Signature of Authorized Representative)

(Affix corporate  
seal here)

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

IF SIGNED BY ATTORNEY-IN-FACT POWER OF ATTORNEY MUST BE ATTACHED.



**SUBCONTRACTOR'S RELEASE OF LIENS**

**STATE OF:**

**COUNTY OF:**

Before me, the undersigned Notary Public in and for the said County and State personally appeared

\_\_\_\_\_, representing the Contractor,  
\_\_\_\_\_ who being duly sworn according to law  
deposes and says that all labor, materials, and outstanding claims and indebtedness of whatever  
nature arising out of the performance of the Contract with \_\_\_\_\_, the Owner,  
for \_\_\_\_\_, Contract No.  
\_\_\_\_\_, have been paid in full and that for the final payment in the amount of  
\$\_\_\_\_\_, the Contractor releases and discharges the Owner and his authorized  
representatives from any liens or claims of any nature because of or arising from this contract and/or  
its performance, which it has had, has or may have in the future.

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

Sworn to and subscribed before me this

\_\_\_\_\_ day of \_\_\_\_\_.

\_\_\_\_\_  
(Notary Public)

My Commission Expires: \_\_\_\_\_

## PART 31 - SECTION 01781 - PROJECT RECORD DOCUMENTS

## PART 32 - GENERAL

### 32.1 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
  - 1. Record Drawings.
  - 2. Record Product Data.

### 32.2 SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set of marked-up Record Prints.
- B. Record Product Data: Submit one copy of each Product Data submittal.
  - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

## PRODUCTS

### 32.3 RECORD DRAWINGS

- A. Record Prints: Maintain one set of black-line white prints of the Contract Drawings and Shop Drawings.
  - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an understandable drawing technique.
    - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  - 2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.

- b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by Change Order or Construction Change Directive.
    - k. Changes made following Engineer's written orders.
    - l. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.
  3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Contractor.

#### 32.4 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  3. Note related Change Orders, Record Drawings, and Product Data where applicable.

32.5 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

EXECUTION

32.6 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.

END OF SECTION 01781

## SECTION 02000 – CONSTRUCTION LAYOUT AND AS-BUILT SURVEY

### 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. The Engineer has provided control points and/or bench marks for horizontal and vertical control. The Contractor must establish all layout required for the construction of the work. Such stakes and markings as the Engineer may set for either their own or the Contractor's guidance shall be preserved by the Contractor. In case of negligence on the part of the Contractor, or their employees, resulting in the destruction of such stakes or markings, an amount equal to the cost of replacing the same may be deducted from subsequent estimates due the Contractor at the discretion of the Engineer.

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.

Topographic survey for controlling depths, leveling, and thicknesses shall be on a grid spacing that can be easily followed either by electronic grade control measures or establishing stringlines for the Contractor's machines to follow. If the Engineer deems proper control is not being maintained, he has the authority to instruct the Contractor to decrease the topographic grid spacing and provide tighter controls on the vertical work without additional compensation to the Contractor.

The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor.

Controls and stakes disturbed or suspect of having been disturbed shall be checked and/or reset as directed by the Engineer without additional cost to the Owner.

The work covered by this section includes:

- C. Verification Survey: Surveying Engineer provided benchmarks and control points and performing spot checks on pavements and grades (cut or fill). Surveyor has the responsibility of reporting any known problems or discrepancies in field data. The Engineer has established control points for the Contractor. The Contractor shall take all necessary precautions to prevent the loss or damage of primary control points.
- D. Construction Staking: Involves the establishment of horizontal alignment and vertical alignments, proposed grades on all pipes, foundations, pavement markings, and slopes. If identified in the plan sheet notes or scope of work, the surveyor may be required to verify milled surface elevations for Contractor or Engineer to develop a pavement overlay plan or establish areas of pavement leveling.

Contractor shall establish a sufficient number of benchmarks and cut/fill stakes for the Engineer's instrument and/or visual checking.

- E. As-built Survey: As-built topographic survey shall be provided to the Engineer with closeout documents. Limits of As-Built shall be the project limits or construction limits as identified on the plans. When no limits are indicated on the drawings, the Contractor shall assume the limits to include all disturbed areas.

## PART 2 - PRODUCTS (NOT USED)

## PART 3 – EXECUTION

### 3.1 DELIVERABLES TO THE ENGINEER

- A. The Contractor must give copies of survey notes to the Engineer for each area of construction and for each placement of material as specified to allow the Engineer to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. All surveys must be provided to the Engineer prior to commencing work items that will cover or disturb the survey staking as set by the Contractor's surveyor. Survey(s) and notes shall be provided in the following format(s):
- B. Hard Copy. The Contractor shall provide a hard copy of survey on minimum ANSI D (22"x34") paper, signed and sealed by a Professional Surveyor registered in the State of Florida.
- C. Electronic. The Contractor shall provide a list of the survey abbreviations used with a description for each. The Contractor shall provide an electronic survey of the surveyed area including all benchmarks, the content of which shall match the hard copy included in item a, Hard Copy, above. The contractor shall provide the electronic version of the survey using one of the following options:
  - 1. Autodesk Civil 3D file containing intelligent COGO points, each with Northing, Easting, Elevation, and Description. Non-intelligent objects representing survey points are NOT acceptable, such as lines, arcs, circles, plain text, or other similarly unintelligent elements.
  - 2. Comma delimited point file (.txt or .csv) containing Northing, Easting, Elevation, and Description for each surveyed point.

### 3.2 VERIFICATION SURVEY

- A. The Contractor shall provide a complete survey of the following to the Engineer for verification, and shall submit a signed and sealed hard copy and electronic copy for each in accordance with "Deliverables to the Engineer" above:
- B. Existing ground surface after topsoil stripping or otherwise removing vegetation
- C. Surface of pavement layers, including subgrade, subbase, base, and surface courses.
- D. Final grades, in accordance with "As-Built Survey" below.

### 3.3 CONSTRUCTION STAKING

- A. Construction Staking and Layout includes but is not limited to:
- B. Clearing and Grubbing perimeter staking at 25-foot stations.
- C. Rough Grade slope stakes at 25-foot grid.
- D. Drainage Swale and Pipe slope stakes and flow line at 25-foot stations.
- E. Subgrade stakes at 25-foot grid in pavement.
- F. All pavement layers at 25-foot grid.
- G. Fence lines at 50-foot stations.
- H. Electrical and Communications System locations, lines and grades including but not limited to duct runs, connections, fixtures, signs, lights, Visual Approach Slope Indicators (VASIs), Precision

Approach Path Indicators (PAPIs), Runway End Identifier Lighting (REIL), Wind Cones, Distance Markers (signs), pull boxes and manholes.

- I. Drain lines, cut stakes and alignment on 25-foot (7.5-m) stations, inlet and manholes.
- J. Painting and Striping layout (pinned with 1.5 inch PK nails) marked for paint Contractor. (All nails shall be removed after painting).
- K. Laser, or other automatic control devices, shall be checked with temporary control point or grade hub at a minimum of once per 400 feet (120 m) per pass (that is, paving lane).

Additional stakes shall be added as appropriate to delineate geometric irregularities for all of the above items, including but not limited to, curves (PC, PT, and midpoint), islands, edge of pavement, and vertical break points.

### 3.4 AS-BUILT SURVEY

- A. Since accurate topographic as-built information is required for closing out all stormwater permits, for the owner's Airport Layout Plan, and for Engineer's general verification of finished grades, the Contractor shall be required to provide as-built topographic surveys signed and sealed by a registered surveyor in the State of Florida. When the project is substantially complete, the Contractor shall begin the field survey work for as-built drawings. As-built topographic survey shall include all above ground features within the project area with special focus on the following:
- B. Horizontal and vertical locations of underground utilities (water, sewer, power, etc.), conduits, handholes, pull boxes, hydrants and other various appurtenances, referenced to established project datum and coordinate system (typically state plane). Sewer lines must have all inverts and pipe slopes labeled. Label all pipe and conduit sizes.
- C. All pavements at an acceptable grid to verify pavement cross slopes and longitudinal grades.
- D. All ponds at an acceptable grid to accurately calculated pond volumes for permit as built certifications to be submitted by the Engineer.
- E. Ground elevations at an acceptable grid to verify earthwork volumes.
- F. Painted centerlines and edges. Label radii.
- G. Storm drainage system construction:
  - 1. Exact distance between all catch basins, manholes, points of intersection, and line terminals or headwalls.
  - 2. The invert elevation of the end of all pipes, stubouts, and headwalls.
  - 3. The rim (top of frame) or top of grate and invert elevations of all manholes, catch basins, and other structures.
  - 4. Elevation and size of all weirs, orifices, and skimmers.
- H. Finished floor elevations.
- I. Sign sizes and text.
- J. Electrical construction identification:
  - 1. Exact distance between all manholes and points of intersection.
  - 2. Exact size and location of duct bank or cable run and what circuits it feeds.
  - 3. Exact location of any lines abandoned in place.
    - 4. Exact location, type, and size of runway and taxiway edge lights, centerline lights, and/or touchdown zone lights.
    - 5. Rim and invert elevation of all manholes and duct banks.
    - 6. Depth of cover on direct burial lines.
    - 7. Locations of cable splices.
- K. Finished floor elevations.
- L. Street sign and airfield guide signs and text descriptions.
- M. Water and Sewer in accordance with notes on utility plans.

N. All horizontal control shall be in accordance with state statutes but no greater than tenth of a foot for horizontal data and one-hundredth of a foot for vertical.

O. Set one (1) Concrete Benchmark and document location and elevation data.

All documents provided to the Engineer must be submitted by a licensed professional surveyor in the State of Florida. Sealed drawings and original signatures shall be provided when requested. Electronic files in AutoCAD format shall also be sent to the Engineer at his request.

### **1.3 MEASUREMENT AND PAYMENT**

- A. All work covered by this section will be paid for at the contract lump sum price for “Construction Staking and As-Built Survey”.
- B. Partial payments will be paid equally in the first, second, third, and fourth progress payments. All such payments will be made less the retainage provided for in the Contract.
- C. Payment will be made under:

02000 Construction Staking and As-Built Survey – per Lump Sum

END OF SECTION 02000



## TECHNICAL SPECIFICATIONS TABLE OF CONTENTS

The following section contains technical specifications for this project. These technical specifications are based on the Federal Aviation Administration (FAA) Standard Specifications for Specifying Construction of Airports as found in FAA Advisory Circular 150/5370-10G, and specifications developed specifically for this project.

Modifications to standard specifications have been made for this Project in the following two forms:

- Strikeouts:** Identifies text that has been deleted from the standard specification. Text shown in this manner is to be ignored and is not applicable to the work.
- Bolded:** Identifies text that has been selected from the available options from the standard specification.
- Bolded Italics:*** Identifies text that has been added to the standard specification. Text shown in this manner is additional language, which is relevant to, and is part of the contract documents for this specific project.

The following terms as they appear in the Technical Specifications shall be defined as follows:

- Owner:** Brevard County  
**Design Engineer:** Michael Baker International, Inc.  
**Engineer:** Owner's Authorized On-Site Representative  
**Utility Owner:** Respective owner of each utility as indicated on the construction drawings.

### **FAA Specifications (\* indicates non-standard specification)**

- Item C-100 – Contractor Quality Control Program (CQCP)
- Item C-102 – Temporary Air and Water Pollution, Soil Erosion and Siltation Control
- Item S-140 – Site Demolition
- Item P-101 – Preparation/Removal of Existing Pavements
- Item P-151 – Clearing and Grubbing
- Item P-152 – Excavation, Subgrade, and Embankment
- Item D-701 – Pipe for Storm Drain and Culverts
- Item D-751 – Manholes, Catch Basins, Inlets and Inspection Holes
- Item D-752 – Concrete Culverts, Headwalls, and Miscellaneous Drainage Structures
- Item D-754 – Concrete Gutters, Ditches, and Fumes
- Item T-901 – Seeding

END OF TABLE OF CONTENTS

## ITEM C-100

### CONTRACTOR QUALITY CPNTROL PROGRAM (CQCP)

#### DESCRIPTION

**100-1 General.** Quality is more than test results. Quality is the combination of proper materials, testing, workmanship, equipment, inspection, and documentation of the project. Establishing and maintaining a culture of quality is key to achieving a quality project. The Contractor shall establish, provide, and maintain an effective Contractor Quality Control Program (CQCP) that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The Contractor shall establish a CQCP that will:

- a. Provide qualified personnel to develop and implement the CQCP.
- b. Provide for the production of acceptable quality materials.
- c. Provide sufficient information to assure that the specification requirements can be met.
- d. Document the CQCP process.

The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the CQCP has been reviewed and approved by the Resident Project Representative (RPR). No partial payment will be made for materials subject to specific quality control (QC) requirements until the CQCP has been reviewed and approved.

The QC requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the quality assurance (QA) testing requirements. QA testing requirements are the responsibility of the RPR or Contractor as specified in the specifications.

A Quality Control (QC)/Quality Assurance (QA) workshop with the Engineer, Resident Project Representative (RPR), Contractor, subcontractors, testing laboratories, and Owner's representative must be held prior to start of construction. The QC/QA workshop will be facilitated by the Contractor. The Contractor shall coordinate with the Airport and the RPR on time and location of the QC/QA workshop. Items to be addressed, at a minimum, will include:

- a. Review of the CQCP including submittals, QC Testing, Action & Suspension Limits for Production, Corrective Action Plans, Distribution of QC reports, and Control Charts.
- b. Discussion of the QA program.
- c. Discussion of the QC and QA Organization and authority including coordination and information exchange between QC and QA.
- d. Establish regular meetings to discuss control of materials, methods and testing.

- e. Establishment of the overall QC culture.

#### **100-2 Description of program.**

**a. General description.** The Contractor shall establish a CQCP to perform QC inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. The CQCP shall ensure conformance to applicable specifications and plans with respect to materials, off-site fabrication, workmanship, construction, finish, and functional performance. The CQCP shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of QC.

**b. Contractor Quality Control Program (CQCP).** The Contractor shall describe the CQCP in a written document that shall be reviewed and approved by the RPR prior to the start of any production, construction, or off-site fabrication. The written CQCP shall be submitted to the RPR for review and approval at least **10** calendar days before the CQCP Workshop. The Contractor's CQCP and QC testing laboratory must be approved in writing by the RPR prior to the Notice to Proceed (NTP).

The CQCP shall be organized to address, as a minimum, the following:

1. QC organization and resumes of key staff
2. Project progress schedule
3. Submittals schedule
4. Inspection requirements
5. QC testing plan
6. Documentation of QC activities and distribution of QC reports
7. Requirements for corrective action when QC and/or QA acceptance criteria are not met
8. Material quality and construction means and methods. Address all elements applicable to the project that affect the quality of the pavement structure including subgrade, subbase, base, and surface course. Some elements that must be addressed include, but is not limited to mix design, aggregate grading, stockpile management, mixing and transporting, placing and finishing, quality control testing and inspection, smoothness, laydown plan, equipment, and temperature management plan.

The Contractor must add any additional elements to the CQCP that is necessary to adequately control all production and/or construction processes required by this contract.

**100-3 CQCP organization.** The CQCP shall be implemented by the establishment of a QC organization. An organizational chart shall be developed to show all QC personnel, their authority, and how these personnel integrate with other management/production and construction functions and personnel.

The organizational chart shall identify all QC staff by name and function, and shall indicate the total staff required to implement all elements of the CQCP, including inspection and testing for each item of work. If necessary, different technicians can be used for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the CQCP, the personnel assigned shall be

subject to the qualification requirements of paragraphs 100-03a and 100-03b. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The QC organization shall, as a minimum, consist of the following personnel:

**a. Program Administrator.** The Contractor Quality Control Program Administrator (CQCPA) must be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The CQCPA must have a minimum of five (5) years of experience in QC pavement construction with prior QC experience on a project of comparable size and scope as the contract.

Included in the five (5) years of paving/QC experience, the CQCPA must meet at least one of the following requirements:

- (1) Professional Engineer with one (1) year of airport paving experience.
- (2) Engineer-in-training with two (2) years of airport paving experience.
- (3) National Institute for Certification in Engineering Technologies (NICET) Civil Engineering Technology Level IV with three (3) years of airport paving experience.
- (4) An individual with four (4) years of airport paving experience, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.

The CQCPA must have full authority to institute any and all actions necessary for the successful implementation of the CQCP to ensure compliance with the contract plans and technical specifications. The CQCPA authority must include the ability to immediately stop production until materials and/or processes are in compliance with contract specifications. The CQCPA must report directly to a principal officer of the construction firm. The CQCPA may supervise the Quality Control Program on more than one project provided that person can be at the job site within two (2) hours after being notified of a problem.

**b. QC technicians.** A sufficient number of QC technicians necessary to adequately implement the CQCP must be provided. These personnel must be either Engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II in Civil Engineering Technology or higher, and shall have a minimum of two (2) years of experience in their area of expertise.

The QC technicians must report directly to the CQCPA and shall perform the following functions:

- (1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by paragraph 100-6.
- (2) Performance of all QC tests as required by the technical specifications and paragraph 100-8.
- (3) Performance of tests for the RPR when required by the technical specifications.

Certification at an equivalent level of qualification and experience by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

**c. Staffing levels.** The Contractor shall provide sufficient qualified QC personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The

scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The CQCP shall state where different technicians will be required for different work elements.

**100-4 Project progress schedule.** Critical QC activities must be shown on the project schedule as required by Section 80, paragraph 80-03, *Execution and Progress*.

**100-5 Submittals schedule.** The Contractor shall submit a detailed listing of all submittals (for example, mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include as a minimum:

- a. Specification item number
- b. Item description
- c. Description of submittal
- d. Specification paragraph requiring submittal
- e. Scheduled date of submittal

**100-6 Inspection requirements.** QC inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by paragraph 100-9.

Inspections shall be performed as needed to ensure continuing compliance with contract requirements until completion of the particular feature of work. Inspections shall include the following minimum requirements:

a. During plant operation for material production, QC test results and periodic inspections shall be used to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment used in proportioning and mixing shall be inspected to ensure its proper operating condition. The CQCP shall detail how these and other QC functions will be accomplished and used.

b. During field operations, QC test results and periodic inspections shall be used to ensure the quality of all materials and workmanship. All equipment used in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The CQCP shall document how these and other QC functions will be accomplished and used.

**100-7 Contractor QC testing facility.**

a. For projects that include Item P-401, Item P-403, and Item P-404, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM D3666, *Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials*:

- 8.1.3 Equipment Calibration and Checks;
- 8.1.9 Equipment Calibration, Standardization, and Check Records;
- 8.1.12 Test Methods and Procedures

**b.** For projects that include P-501, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM C1077, Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation:

- 7 Test Methods and Procedures
- 8 Facilities, Equipment, and Supplemental Procedures

**100-8 QC testing plan.** As a part of the overall CQCP, the Contractor shall implement a QC testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification Item, as well as any additional QC tests that the Contractor deems necessary to adequately control production and/or construction processes.

The QC testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

- a.** Specification item number (e.g., P-401)
- b.** Item description (e.g., Hot Mix Asphalt Pavements)
- c.** Test type (e.g., gradation, grade, asphalt content)
- d.** Test standard (e.g., ASTM or American Association of State Highway and Transportation Officials (AASHTO) test number, as applicable)
- e.** Test frequency (e.g., as required by technical specifications or minimum frequency when requirements are not stated)
- f.** Responsibility (e.g., plant technician)
- g.** Control requirements (e.g., target, permissible deviations)

The QC testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples in accordance with ASTM D3665. The RPR shall be provided the opportunity to witness QC sampling and testing.

All QC test results shall be documented by the Contractor as required by paragraph 100-9.

**100-9 Documentation.** The Contractor shall maintain current QC records of all inspections and tests performed. These records shall include factual evidence that the required QC inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the RPR daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the CQCPA.

Contractor QC records required for the contract shall include, but are not necessarily limited to, the following records:

- a. Daily inspection reports.** Each Contractor QC technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports

shall provide factual evidence that continuous QC inspections have been performed and shall, as a minimum, include the following:

- (1) Technical specification item number and description
- (2) Compliance with approved submittals
- (3) Proper storage of materials and equipment
- (4) Proper operation of all equipment
- (5) Adherence to plans and technical specifications
- (6) Summary of any necessary corrective actions
- (7) Safety inspection.
- (8) **Photographs**

The daily inspection reports shall identify all QC inspections and QC tests conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible QC technician and the CQCPA. The RPR shall be provided at least one copy of each daily inspection report on the work day following the day of record. When QC inspection and test results are recorded and transmitted electronically, the results must be archived.

**b. Daily test reports.** The Contractor shall be responsible for establishing a system that will record all QC test results. Daily test reports shall document the following information:

- (1) Technical specification item number and description
- (2) Test designation
- (3) Location
- (4) Date of test
- (5) Control requirements
- (6) Test results
- (7) Causes for rejection
- (8) Recommended remedial actions
- (9) Retests

Test results from each day's work period shall be submitted to the RPR prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical QC charts. When QC daily test results are recorded and transmitted electronically, the results must be archived.

**100-10 Corrective action requirements.** The CQCP shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the CQCP as a whole, and for individual items of work contained in the technical specifications.

The CQCP shall detail how the results of QC inspections and tests will be used for determining the need for corrective action and shall contain clear rules to gauge when a process is out of

control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and use statistical QC charts for individual QC tests. The requirements for corrective action shall be linked to the control charts.

**100-11 Inspection and/or observations by the RPR.** All items of material and equipment are subject to inspection and/or observation by the RPR at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate QC system in conformance with the requirements detailed here and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to inspection and/or observation by the RPR at the site for the same purpose.

Inspection and/or observations by the RPR does not relieve the Contractor of performing QC inspections of either on-site or off-site Contractor's or subcontractor's work.

**100-12 Noncompliance.**

a. The Resident Project Representative (RPR) will provide written notice to the Contractor of any noncompliance with their CQCP. After receipt of such notice, the Contractor must take corrective action.

b. When QC activities do not comply with either the CQCP or the contract provisions or when the Contractor fails to properly operate and maintain an effective CQCP, and no effective corrective actions have been taken after notification of non-compliance, the RPR will recommend the Owner take the following actions:

(1) Order the Contractor to replace ineffective or unqualified QC personnel or subcontractors and/or

(2) Order the Contractor to stop operations until appropriate corrective actions are taken.

**METHOD OF MEASUREMENT**

**100-13 Basis of measurement and payment.** [Not Used] [Contractor Quality Control Program (CQCP) is for the personnel, tests, facilities and documentation required to implement the CQCP. The CQCP will be paid as a lump sum with the following schedule of partial payments:]

~~1. a. With first pay request, 25% with approval of CQCP and completion of the Quality Control (QC)/Quality Assurance (QA) workshop.~~

~~b. When 25% or more of the original contract is earned, an additional 25%.~~

~~c. When 50% or more of the original contract is earned, an additional 20%.~~

~~d. When 75% or more of the original contract is earned, an additional 20%.~~

~~e. After final inspection and acceptance of project, the final 10%.~~  
~~—†~~



## **BASIS OF PAYMENT**

**100-14 Payment will be made under:**

**Item C-100 Contractor Quality Control Program (CQCP)**

## **REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

National Institute for Certification in Engineering Technologies (NICET)

ASTM International (ASTM)

ASTM C1077 Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation

ASTM D3665 Standard Practice for Random Sampling of Construction Materials

ASTM D3666 Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

**END OF ITEM C-100**

## ITEM C-102

### TEMPORARY AIR AND WATER POLLUTION, SOIL EROSION, AND SILTATION CONTROL

#### DESCRIPTION

**102-1.** This item shall consist of temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

Temporary erosion control shall be in accordance with the approved erosion control plan; the approved Construction Safety and Phasing Plan (CSPP) and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

#### MATERIALS

**102-2.1 Grass.** Grass that will not compete with the grasses sown later for permanent cover per Item T-901 shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant.

**102-2.2 Mulches.** Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials per Item T-908. Mulches shall not create a wildlife attractant.

**102-2.3 Fertilizer.** Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

**102-2.4 Slope drains.** Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

**102-2.5 Silt fence.** Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

**102-2.6 Other.** All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

## CONSTRUCTION REQUIREMENTS

**102-3.1 General.** In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The RPR shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

**102-3.2 Schedule.** Prior to the start of construction, the Contractor shall submit schedules in accordance with the approved Construction Safety and Phasing Plan (CSPP) and the plans for accomplishment of temporary and permanent erosion control work for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

**102-3.3 Construction details.** The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the plans and approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

**102-3.4 Installation, maintenance and removal of silt fence.** Silt fences shall extend a minimum of 16 inches (41 cm) and a maximum of 34 inches (86 cm) above the ground surface. Posts shall be set no more than 10 feet (3 m) on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch (300-mm) overlap and securely sealed. A trench shall be excavated approximately 4 inches (100 mm) deep by 4 inches (100 mm) wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

#### METHOD OF MEASUREMENT

**102-4.1** Temporary erosion and pollution control work required will be performed as scheduled or directed by the RPR. Completed and accepted work will be measured as follows:

- ~~a. Temporary seeding and mulching will be measured by the square yard (square meter).~~
- ~~b. Temporary slope drains will be measured by the linear foot (meter).~~
- ~~c. Temporary benches, dikes, dams, and sediment basins will be measured by the cubic yard (cubic meter) of excavation performed, including necessary cleaning of sediment basins, and the cubic yard (cubic meter) of embankment placed as directed by the RPR.~~
- ~~d. All fertilizing will be measured by the ton (kg).~~
- e. Installation and removal of silt fence will be measured by the **Lump sum**.

**102-4.2** Control work performed for protection of construction areas outside the construction limits, such as borrow and waste areas, haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor.

#### BASIS OF PAYMENT

**102-5.1** Accepted quantities of temporary water pollution, soil erosion, and siltation control work ordered by the RPR and measured as provided in paragraph 102-4.1 will be paid for under:

- |                 |   |
|-----------------|---|
| Item C-102-5.1a | Temporary seeding and mulching - per square yard (square meter)                   |
| Item C-102-5.1b | Temporary slope drains - per linear foot (meter)                                  |
| Item C-102-5.1c | Temporary benches, dikes, dams and sediment basins - per cubic yard (cubic meter) |
| Item C-102-5.1d | Fertilizing - per ton (kg)  |
| Item C-102-5.1e | Installation and removal of silt fence <b>lump sum</b>                            |

Where other directed work falls within the specifications for a work item that has a contract price, the units of work shall be measured and paid for at the contract unit price bid for the various items.

Temporary control features not covered by contract items that are ordered by the RPR will be paid for in accordance with Section 90, paragraph 90-05 *Payment for Extra Work*.

## REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33      *Hazardous Wildlife Attractants on or Near Airports*

AC 150/5370-2 *Operational Safety on Airports During Construction*

ASTM International (ASTM)

ASTM D6461    *Standard Specification for Silt Fence Materials*

United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

**END OF ITEM C-102**

## ITEM S-140

### SITE DEMOLITION

#### DESCRIPTION

**140-1.1** This item consists of demolition work including complete or partial removal of existing construction as indicated on the drawings or as directed by the Engineer. The work includes coordination and scheduling of demolition work by other contractors and utility companies. See specification 01920 for additional information on demolition lump sum items.

Do not begin demolition work until authorized by Owner.

**140-1.2 Scope.** Types of demolition work include but are not limited to:

- a. Various types of Pipe Removal
- b. Removal of Sanitary and Septic System Components
- c. Removal of Concrete Pavement, Slabs, and Foundations
- d. Removal of Drainage Structures and Piping
- e. Removal of Water System Components
- f. Asphalt Pavement and Base Removal
- g. Portland Cement Concrete Pavement and Base Removal
- h. Building Demolition

**140-1.3 Related Work.** (Not Used)

**140-1.4 Submittals.** Prior to the start of demolition work, submit a demolition plan indicating proposed methods, sequence of operations, and schedule for demolition and removal work to the Engineer for approval. Include coordination for shut-off, capping, and continuation of utility services as required; details for phasing; erosion control; removal methods; disposal of materials; salvage requirements; disconnection schedule of airfield lighting; and coordination of other work in progress.

**140-1.5 Job Conditions.**

- a. Condition of Structures. Owner assumes no responsibility for actual condition of items or structures to be demolished.
- b. Demolition and Salvage. Except where materials are designated to be incorporated into new work or retained by Owner, items indicated to be removed but of salvable value to Contractor may be removed as work progresses. Transport such salvaged items from the site as they are removed.
- c. Sales. Storage or sale of removed items on site will not be permitted.
- d. Protection. Provide temporary barricades and other forms of protection as required to protect workmen and the public from injury due to demolition work, to provide free and safe passage of Owner's personnel and general public to and from occupied portions of site, and to protect from damage existing work that is to remain in place. Do not overload structural elements or pavements to remain.

- e. Damages. Promptly repair damages caused to adjacent or other facilities by demolition work at no cost to Owner. All such repairs must have Engineer's approval.
- f. Traffic. Conduct demolition operations and debris removal in a manner to ensure minimum interference with roads, airport employees, general public, and aircraft operation areas.
- g. Explosives. Use of explosives will not be permitted.
- h. Environmental Controls. Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Do not use water if it results in hazardous or objectionable conditions such as ice, flooding, or pollution.

**140-1.6 Regulatory and Safety Requirements.** Comply with all federal, state, and local safety, security, hauling, disposal, and environmental protection regulations.

**140-1.7 Foreign Object Damage (FOD).** Aircraft and aircraft engines are subject to FOD from debris and waste material lying on airfield pavements. Remove all materials that may appear on or near operational aircraft pavements due to the Contractor's operations. If necessary, the Engineer may require the Contractor to install a temporary barricade at the Contractor's expense to control the spread of FOD potential debris. The barricade shall consist of a fence covered with a fabric designed to stop the spread of debris; anchor the fence and fabric to prevent displacement by winds or jet/prop blasts. Remove barricade when no longer required.

**140-1.8 Staging.** Certain items cannot be demolished until after work in other phases or packages are complete. Coordinate work with Owner, Engineer, and approved phasing plan.

## ***EXECUTION***

**140-2.1 Inspection.** Prior to commencement of demolition work, inspect areas in which demolition will be performed. Photograph or video tape existing condition of structure surfaces, equipment or surrounding properties which could be misconstrued as damage resulting from demolition work. File photographs or tapes with Engineer prior to starting work.

**140-2.2 Preparation.** Provide shoring, bracing, or support to prevent movement, settlement, or collapse of structures or elements to be demolished and adjacent facilities to remain. Cease operations and notify the Engineer immediately if safety of structure or surrounding area appears to be endangered. Take precautions to support structure until determination is made for continuing operations.

### **140-2.3 Demolition.**

- a. Perform demolition work in a systematic manner. Use such methods as required to complete work indicated on drawings or directed by Engineer in accordance with the demolition plan and governing regulations.
- b. Demolish concrete, excluding pavements, and masonry construction in sections; cut concrete and masonry at junctions with construction to remain using power-driven impact tools, saws, or hand tools as permitted.
- c. Completely fill below-grade areas and voids resulting from demolition work. Provide fill consisting of approved soil, gravel or sand, free of trash and debris, stones over 6" diameter, roots or other organic matter. Place fill in accordance with Item P-152. Payment for fill will

be included in the unit cost for the item removed.

- d. Remove existing utilities and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Engineer.

**140-2.4 Compaction of Existing Subgrade.** Existing subgrade that is exposed by the demolition work and will be under areas to be paved shall be compacted per the requirements specified in specification P-152. The cost of compaction work shall be incidental to the item.

**140-2.5 Reuse of Materials.** Materials and equipment indicated to be reused or relocated shall be removed and stored to prevent damage and re-installed as the work progresses.

**140-2.6 Items to be Salvaged.** Materials and equipment to be removed that are indicated to remain the property of the Owner shall be removed, protected and delivered to a storage site on airport property as designated by the Engineer.

**140-2.7 Dust and Debris Control.** Contractor shall prevent the spread of dust and debris on airfield pavements and elsewhere and shall avoid creation of a nuisance or hazard in the surrounding area. Vacuum and sweep pavements as often as necessary to control the spread of debris that may result in FOD potential to aircraft.

**140-2.8 Disposal of Demolished Materials.**

- a. Transport and legally dispose of all debris, rubbish and other demolished materials, daily, off airport property. Do not allow accumulations on airfield pavements or elsewhere on site. Store materials that cannot be removed daily in areas designated by the Engineer.
- b. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution.
- c. Burning will not be permitted on airport property

**140-2.9 Clean-Up.** Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave areas clean and free of dust and debris.

***MEASUREMENT AND PAYMENT***

**140-3.1 General.** The contract unit prices as listed on the Bid Form shall include the cost of removing the items, labor, tools, equipment, handling, hauling, stockpiling, disposal, re-installation, clean-up, and all incidental work required to complete the items.

**END OF ITEM S-140**



## ITEM P-101

### PREPARATION/REMOVAL OF EXISTING PAVEMENTS

#### DESCRIPTION

**101-1** This item shall consist of preparation of existing pavement surfaces for overlay, surface treatments, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable plans.

#### EQUIPMENT AND MATERIALS

**101-2** All equipment and materials shall be specified here and in the following paragraphs or approved by the Resident Project Representative (RPR). The equipment shall not cause damage to the pavement to remain in place.

#### CONSTRUCTION

##### **101-3.1 Removal of existing pavement.**

The Contractor's removal operation shall be controlled to not damage adjacent pavement structure, and base material, cables, utility ducts, pipelines, or drainage structures which are to remain under the pavement.

**a. Concrete pavement removal.** Full depth saw cuts shall be made perpendicular to the slab surface. The Contractor shall saw through the full depth of the slab including any dowels at the joint, removing the pavement and installing new dowels as shown on the plans and per the specifications. Where the perimeter of the removal limits is not located on the joint and there are no dowels present, the perimeter shall be saw cut the full depth of the pavement. The pavement inside the saw cut shall be removed by methods which will not cause distress in the pavement which is to remain in place. If the material is to be wasted on the airport site, it shall be reduced to a maximum size of **6"**. Concrete slabs that are damaged by under breaking shall be repaired or removed and replaced as directed by the RPR.

The edge of existing concrete pavement against which new pavement abuts shall be protected from damage at all times. Spall and underbreak repair shall be in accordance with the plans. Any underlying material that is to remain in place, shall be recompact and/or replaced as shown on the plans. Adjacent areas damaged during repair shall be repaired or replaced at the Contractor's expense.

**b. Asphalt pavement removal.** Asphalt pavement to be removed shall be cut to the full depth of the asphalt pavement around the perimeter of the area to be removed. If the material is to be, it shall be **broken to a maximum size of 2 inches (mm)**.

**c. Repair or removal of Base, Subbase, and/or Subgrade.** All failed material including surface, base course, subbase course, and subgrade shall be removed and repaired as shown on the plans or as directed by the RPR. Materials and methods of construction shall comply with the applicable sections of these specifications. Any damage caused by Contractor's removal process shall be repaired at the Contractor's expense.

**101-3.2 Preparation of joints and cracks prior to overlay/surface treatment.** Remove all vegetation and debris from cracks to a minimum depth of 1 inch (25 mm). If extensive

vegetation exists, treat the specific area with a concentrated solution of a water-based herbicide approved by the RPR. Fill all cracks greater than 1/4 inch (6 mm) wide) with a crack sealant **per ASTM D6690**. The crack sealant, preparation, and application shall be compatible with the surface treatment/overlay to be used. To minimize contamination of the asphalt with the crack sealant, underfill the crack sealant a minimum of 1/8 inch (3 mm), not to exceed 1/4 inch (6 mm).

Any excess joint or crack sealer shall be removed from the pavement surface.

**Wider cracks (over 1-1/2 inch wide (38 mm)), along with soft or sunken spots, indicate that the pavement or the pavement base should be repaired or replaced as stated below.**

**Cracks and joints may be filled with a mixture of emulsified asphalt and aggregate. The aggregate shall consist of limestone, volcanic ash, sand, or other material that will cure to form a hard substance. The combined gradation shall be as shown in the following table.**

**Gradation**

<b>Sieve Size</b>	<b>Percent Passing</b>
<b>No. 4 (4.75 mm)</b>	<b>100</b>
<b>No. 8 (2.36 mm)</b>	<b>90-100</b>
<b>No. 16 (1.18 mm)</b>	<b>65-90</b>
<b>No. 30 (600 µm)</b>	<b>40-60</b>
<b>No. 50 (300 µm)</b>	<b>25-42</b>
<b>No. 100 (150 µm)</b>	<b>15-30</b>
<b>No. 200 (75 µm)</b>	<b>10-20</b>

**Up to 3% cement can be added to accelerate the set time. The mixture shall not contain more than 20% natural sand without approval in writing from the RPR.**

**The proportions of asphalt emulsion and aggregate shall be determined in the field and may be varied to facilitate construction requirements. Normally, these proportions will be approximately one part asphalt emulsion to five parts aggregate by volume. The material shall be poured or placed into the joints or cracks and compacted to form a voidless mass. The joint or crack shall be filled to within +0 to -1/8 inches (+0 to -3 mm) of the surface. Any material spilled outside the width of the joint shall be removed from the pavement surface prior to constructing the overlay. Where concrete overlays are to be constructed, only the excess joint material on the pavement surface and vegetation in the joints need to be removed.**

**101-3.3 Removal of Foreign Substances/contaminates prior to overlay.** Removal of foreign substances/contaminates from existing pavement that will affect the bond of the new treatment shall consist of removal of rubber, fuel spills, oil, crack sealer, at least 90% of paint, and other foreign substances from the surface of the pavement. Areas that require removal are designated on the plans and as directed by the RPR in the field during construction. If chemicals are used, they shall comply with the state's environmental protection regulations. Removal methods used shall not cause major damage to the pavement, or to any structure or utility within or adjacent to the work area. Major damage is defined as changing the properties of the pavement, removal of asphalt causing the aggregate to ravel, or removing pavement over 1/8 inch (3 mm) deep. If it is

deemed by the RPR that damage to the existing pavement is caused by operational error, such as permitting the application method to dwell in one location for too long, the Contractor shall repair the damaged area without compensation and as directed by the RPR.

Removal of foreign substances shall not proceed until approved by the RPR. Water used for high-pressure water equipment shall be provided by the Contractor at the Contractor's expense. No material shall be deposited on the pavement shoulders. All wastes shall be disposed of in areas indicated in this specification or shown on the plans.

#### **101-3.4 Concrete spall or failed asphaltic concrete pavement repair.**

**a. Repair of concrete spalls in areas to be overlaid with asphalt.** The Contractor shall repair all spalled concrete as shown on the plans or as directed by the RPR. The perimeter of the repair shall be saw cut a minimum of 2 inches (50 mm) outside the affected area and 2 inches (50 mm) deep. The deteriorated material shall be removed to a depth where the existing material is firm or cannot be easily removed with a geologist pick. The removed area shall be filled with asphalt mixture with aggregate sized appropriately for the depth of the patch. The material shall be compacted with equipment approved by the RPR until the material is dense and no movement or marks are visible. The material shall not be placed in lifts over 4 inches (100 mm) in depth. This method of repair applies only to pavement to be overlaid.

**b. Asphalt pavement repair.** The Contractor shall repair all spalled concrete as shown on the plans or as directed by the RPR. The failed areas shall be removed as specified in paragraph 101-3.1b. All failed material including surface, base course, subbase course, and subgrade shall be removed. Materials and methods of construction shall comply with the applicable sections of these specifications.

**101-3.5 Cold milling.** Milling shall be performed with a power-operated milling machine or grinder, capable of producing a uniform finished surface. The milling machine or grinder shall operate without tearing or gouging the underlying surface. The milling machine or grinder shall be equipped with grade and slope controls, and a positive means of dust control. All millings shall be removed and disposed **as requested by the owner within 2 miles of work.** If the Contractor mills or grinds deeper or wider than the plans specify, the Contractor shall replace the material removed with new material at the Contractor's Expense.

**a. Patching.** The milling machine shall be capable of cutting a vertical edge without chipping or spalling the edges of the remaining pavement and it shall have a positive method of controlling the depth of cut. The RPR shall layout the area to be milled with a straightedge in increments of 1-foot (30 cm) widths. The area to be milled shall cover only the failed area. Any excessive area that is milled because the Contractor doesn't have the appropriate milling machine, or areas that are damaged because of his negligence, shall be repaired by the Contractor at the Contractor's Expense.

~~**b. Profiling, grade correction, or surface correction.** The milling machine shall have a minimum width of [ 7 ] feet ([ 2 ] m) and it shall be equipped with electronic grade control devices that will cut the surface to the grade specified. The tolerances shall be maintained within +0 inch and -1/4 inch (+0 mm and -6mm) of the specified grade. The machine must cut vertical edges and have a positive method of dust control. The machine must have the ability to [ windrow the millings or cuttings ] [ remove the millings or cuttings from the pavement and load them into a truck ]. All millings shall be removed and disposed of [ off the airport ] [ in areas designated on the plans ].~~

**c. Clean-up.** The Contractor shall sweep the milled surface daily and immediately after the milling until all residual materials are removed from the pavement surface. Prior to paving, the Contractor shall wet down the milled pavement and thoroughly sweep and/or blow the surface to remove loose residual

material. Waste materials shall be collected and removed from the pavement surface and adjacent areas by sweeping or vacuuming. Waste materials shall be removed and disposed **off Airport property**.

**101-3.6. Preparation of asphalt pavement surfaces prior to surface treatment.** Existing asphalt pavements to be treated with a surface treatment shall be prepared as follows:

a. Patch asphalt pavement surfaces that have been softened by petroleum derivatives or have failed due to any other cause. Remove damaged pavement to the full depth of the damage and replace with new asphalt pavement similar to that of the existing pavement in accordance with paragraph 101-3.4b.

b. Repair joints and cracks in accordance with paragraph 101-3.2.

~~c. Remove oil or grease that has not penetrated the asphalt pavement by scrubbing with a detergent and washing thoroughly with clean water. After cleaning, treat these areas with an oil spot primer. [ ]~~

d. Clean pavement surface immediately prior to placing the surface treatment so that it is free of dust, dirt, grease, vegetation, oil or any type of objectionable surface film.

**101-3.7 Maintenance.** The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the RPR. The surface shall be kept clean and free from foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

**101-3.8 Preparation of Joints in Rigid Pavement prior to resealing.** Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the joint and does not damage the joint.

**101-3.8.1 Removal of Existing Joint Sealant.** All existing joint sealants will be removed by plowing or use of hand tools. Any remaining sealant and or debris will be removed by use of wire brushes or other tools as necessary. Resaw joints removing no more than 1/16 inch (2 mm) from each joint face. Immediately after sawing, flush out joint with water and other tools as necessary to completely remove the slurry.

**101-3.8.2 Cleaning prior to sealing.** Immediately before sealing, joints shall be cleaned by removing any remaining laitance and other foreign material. Allow sufficient time to dry out joints prior to sealing. Joint surfaces will be surface-dry prior to installation of sealant.

**101-3.8.3 Joint sealant.** Joint material and installation will be in accordance with **Item P-605 Item P-604**.

**101-3.9 Preparation of Cracks in Flexible Pavement prior to sealing.** Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the cracks and does not damage the pavement.

~~**101-3.9.1 Preparation of Crack.** Widen crack with [ router ] [ random crack saw ] by removing a minimum of 1/16 inch (2 mm) from each side of crack. Immediately before sealing, cracks will be blown out with a hot air lance combined with oil and water free compressed air.~~

**101-3.9.2 Removal of Existing Crack Sealant.** Existing sealants will be removed by ~~routing~~ ~~random crack saw~~. Following ~~routing~~ ~~sawing~~ any remaining debris will be removed by use of a hot lance combined with oil and water free compressed air.

**101-3.9.3 Crack Sealant.** Crack sealant material and installation will be in accordance with **Item P-605**.

**101-3.9.4 Removal of Pipe and other Buried Structures.**

a. **Removal of Existing Pipe Material.** Remove the types of pipe as indicated on the plans. The pipe material shall be legally disposed of off-site in a timely manner following removal. Trenches shall be backfilled with material equal to or better in quality than adjacent embankment. Trenches under paved areas must be compacted to 95% of ASTM D1557

b. **Removal of Inlets/Manholes.** Where indicated on the plans or as directed by the RPR, inlets and/or manholes shall be removed and legally disposed of off-site in a timely fashion after removal. Excavations after removal shall be backfilled with material equal or better in quality than adjacent embankment. When under paved areas must be compacted to 95% of ASTM D1557, when outside of paved areas must be compacted to **95%** of ASTM D698.

c. **Removal of headwalls and MES.**

**METHOD OF MEASUREMENT**

**101-4.1 Lump sum.** No separate measurement for payment will be made. The work covered by this section shall be considered as a subsidiary obligation of the Contractor and covered under the other contract items.

~~**101-4.1 Pavement removal.** The unit of measurement for pavement removal shall be the number of square yards (square meters) removed by the Contractor. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal. Dowel bar installation shall be incidental to pavement removal.~~

~~**101-4.2 Joint and crack repair.** The unit of measurement for joint and crack repair shall be the linear foot (meter) of joint.~~

~~**101-4.3 Removal of Foreign Substances/contaminates.** The unit of measurement for foreign Substances/contaminates removal shall be the square foot (meter).~~

~~**101-4.4 Spalled and failed asphalt pavement repair.** The unit of measure for failed asphalt pavement repair shall be square foot (square meter).~~

~~**101-4.5 Concrete Spall Repair.** The unit of measure for concrete spall repair shall be the number of square feet (square meter). The location and average depth of the patch shall be determined and agreed upon by the RPR and the Contractor.~~

~~101-4.6 Cold milling. The unit of measure for cold milling shall be [ ] inches of milling per square yard (square meter). The location and average depth of the cold milling shall be as shown on the plans. If the initial cut does not correct the condition, the Contractor shall re-mill the area and will be paid for the total depth of milling. ]~~

**101-4.7 Removal of Pipe and other Buried Structures.** The unit of measurement for removal of pipe and other buried structures will be lump sum. No separate measurement for payment will be made. The work covered by this section shall be considered as a subsidiary obligation of the Contractor and covered under the other contract items

### **BASIS OF PAYMENT**

**101-5.1 Payment.** Payment shall be made at contract unit price for the unit of measurement as specified above. This price shall be full compensation for furnishing all materials and for all preparation, hauling, and placing of the material and for all labor, equipment, tools, and incidentals necessary to complete this item.

~~[ Item P 101-5.1 Pavement Removal – [ Lump sum ] [ per square yard (square meter) ] ]~~

~~Item P 101-5.2 Joint and Crack Repair – per linear foot (meter)~~

~~Item P 101-5.3 Removal of Foreign Substances/contaminates – per square foot (square meter)~~

~~Item P 101-5.4 Spalled and Failed Asphalt Pavement Repair – per square foot (square meter)~~

~~Item P 101-5.5 Concrete Spall Repair – per square foot (square meter)~~

~~Item P 101-5.6 Cold Milling per square yard (square meter) ]~~

Item P-101-5.7 Removal of Pipe and other Buried Structures – Lump sum

### **REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5380-6 Guidelines and Procedures for Maintenance of Airport Pavements.

ASTM International (ASTM)

ASTM D6690 Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

### **END OF ITEM P-101**

## ITEM P-151

### CLEARING AND GRUBBING

#### DESCRIPTION

**151-1.1** This item shall consist of clearing or clearing and grubbing, including the disposal of materials, for all areas within the limits designated on the plans or as required by the Resident Project Representative (RPR).

**a. Clearing** shall consist of the cutting and removal of all trees, stumps, brush, logs, hedges, the removal of fences and other loose or projecting material from the designated areas. The grubbing of stumps and roots will not be required.

**b. Clearing and grubbing** shall consist of clearing the surface of the ground of the designated areas of all trees, stumps, down timber, logs, snags, brush, undergrowth, hedges, heavy growth of grass or weeds, fences, structures, debris, and rubbish of any nature, natural obstructions or such material which in the opinion of the RPR is unsuitable for the foundation of strips, pavements, or other required structures, including the grubbing of stumps, roots, matted roots, foundations, and the disposal from the project of all spoil materials resulting from clearing and grubbing.

**c. Tree Removal.** Tree Removal shall consist of the cutting and removal of isolated single trees or isolated groups of trees, and the grubbing of stumps and roots. The removal of all the trees of this classification shall be in accordance with the requirements for the particular area being cleared.

#### CONSTRUCTION METHODS

**151-2.1 General.** The areas denoted on the plans to be **cleared and grubbed if necessary** shall be staked on the ground by the **RPR**.

The removal of existing structures and utilities required to permit orderly progress of work shall be accomplished by local agencies, unless otherwise shown on the plans. Whenever a telephone pole, pipeline, conduit, sewer, roadway, or other utility is encountered and must be removed or relocated, the Contractor shall advise the RPR who will notify the proper local authority or owner to secure prompt action.

**151-2.1.1 Disposal.** All materials removed by clearing or by clearing and grubbing shall be disposed of **as directed by owner**, except when otherwise directed by the RPR. As far as practicable, waste concrete and masonry shall be placed on slopes of embankments or channels. When embankments are constructed of such material, this material shall be placed in accordance with requirements for formation of embankments. Any broken concrete or masonry that cannot be used in construction and all other materials not considered suitable for use elsewhere, shall be disposed of by the Contractor. In no case, shall any discarded materials be left in windrows or piles adjacent to or within the airport limits. The manner and location of disposal of materials shall be subject to the approval of the RPR and shall not create an unsightly or objectionable view. When the Contractor is required to locate a disposal area outside the airport property limits, the Contractor shall obtain and file with the RPR permission in writing from the property owner for the use of private property for this purpose.

**151-2.1.2 Blasting. Blasting shall not be allowed.**

**151-2.2 Clearing.** The Contractor shall clear the staked or indicated area of all materials as indicated on the plans. Trees unavoidably falling outside the specified clearing limits must be cut up, removed, and disposed of in a satisfactory manner. To minimize damage to trees that are to be left standing, trees shall be felled toward the center of the area being cleared. The Contractor shall preserve and protect from injury all trees not to be removed. The trees, stumps, and brush shall be cut flush with the original ground surface. The grubbing of stumps and roots will not be required.

Fences shall be removed and disposed of as directed by the RPR. Fence wire shall be neatly rolled and the wire and posts stored on the airport if they are to be used again, or stored at a location designated by the RPR if the fence is to remain the property of a local owner or authority.

**151-2.3 Clearing and grubbing.** In areas designated to be cleared and grubbed, all stumps, roots, buried logs, brush, grass, and other unsatisfactory materials as indicated on the plans, shall be removed, except where embankments exceeding 3-1/2 feet (105 cm) in depth will be constructed outside of paved areas. For embankments constructed outside of paved areas, all unsatisfactory materials shall be removed, but sound trees, stumps, and brush can be cut off flush with the original ground and allowed to remain. Tap roots and other projections over 1-1/2 inches (38 mm) in diameter shall be grubbed out to a depth of at least 18 inches (0.5 m) below the finished subgrade or slope elevation.

Any buildings and miscellaneous structures that are shown on the plans to be removed shall be demolished or removed, and all materials shall be disposed of by removal from the site. The cost of removal is incidental to this item. The remaining or existing foundations, wells, cesspools, and like structures shall be destroyed by breaking down the materials of which the foundations, wells, cesspools, etc., are built to a depth at least 2 feet (60 cm) below the existing surrounding ground. Any broken concrete, blocks, or other objectionable material that cannot be used in backfill shall be removed and disposed of at the Contractor's expense. The holes or openings shall be backfilled with acceptable material and properly compacted.

All holes in embankment areas remaining after the grubbing operation shall have the sides of the holes flattened to facilitate filling with acceptable material and compacting as required in Item P-152. The same procedure shall be applied to all holes remaining after grubbing in areas where the depth of holes exceeds the depth of the proposed excavation.

#### METHOD OF MEASUREMENT

**151-3.1** The quantities of clearing as shown by the limits on the plans shall be **per square yards** of land specifically cleared.

**151-3.2** The quantities of clearing and grubbing as shown by the limits on the plans shall be in **square yards** of land specifically cleared and grubbed.

~~**151-3.3** The quantity of tree removal as shown on the plans shall be the  $\frac{\text{number of individual trees}}{\text{number of acres (square meters) or fractions thereof}}$  per lump sum of land specifically cleared.~~

#### BASIS OF PAYMENT

**151-4.1** Payment shall be made at the contract unit price **per lump sum** for clearing. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and



incidentals necessary to complete the item.

**151-4.2** Payment shall be made at the contract unit price **per lump sum** for clearing and grubbing. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.

~~**151-4.3** Payment shall be made at the contract unit price [ per number of individual trees ] [ per acre (square meter) ] [ per lump sum ] for tree removal. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.~~

Payment will be made under:

~~Item P-151-4.1 Clearing [ per acre (square meter) or fractions thereof ]  
[ per lump sum ]~~

Item P-151-4.2 Clearing and grubbing - **per lump sum**

~~Item P-152-4.3 Tree Removal [ per number of individual trees ] [ per acre  
(square meter) or fractions thereof ] [ per lump sum ]~~

**END OF ITEM P-151**

## ITEM P-152

### EXCAVATION, SUBGRADE, AND EMBANKMENT

#### DESCRIPTION

**152-1.1** This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

**152-1.2 Classification.** All material excavated shall be classified as defined below:

~~a. **Unclassified excavation.** Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature [ which is not otherwise classified and paid for under one of the following items ].~~

~~[ b. [ ] ]~~

~~[ **Rock excavation.** Rock excavation shall include all solid rock in ledges, in bedded deposits, in unstratified masses, and conglomerate deposits which are so firmly cemented they cannot be removed without blasting or using rippers. All boulders containing a volume of more than 1/2 cubic yard (0.4 m<sup>3</sup>) will be classified as "rock excavation." ]~~

~~[ **Muck excavation.** Muck excavation shall consist of the removal and disposal of deposits or mixtures of soils and organic matter not suitable for foundation material. Muck shall include materials that will decay or produce subsidence in the embankment. It may consist of decaying stumps, roots, logs, humus, or other material not satisfactory for incorporation in the embankment. ]~~

~~[ **Drainage excavation.** Drainage excavation shall consist of all excavation made for the primary purpose of drainage and includes drainage ditches, such as intercepting, inlet or outlet ditches, temporary levee construction, or any other type as shown on the plans. ]~~

**Borrow excavation.** Contractor to supply borrow excavation shall consist of approved material required for the construction of embankments or for other portions of the work in excess of the quantity of usable material available from required excavations. Borrow material shall be obtained from areas designated by the Resident Project Representative (RPR) within the limits of the airport property but outside the normal limits of necessary grading, or from areas outside the airport boundaries.

~~[ Other. ] ]~~

**152-1.3 Unsuitable excavation.** Unsuitable material shall be disposed in designated waste areas as shown on the plans. Materials containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material suitable for topsoil may be used on the embankment slope when approved by the RPR.

## CONSTRUCTION METHODS

**152-2.1 General.** Before beginning excavation, grading, and embankment operations in any area, the area shall be cleared or cleared and grubbed in accordance with Item P-151.

The suitability of material to be placed in embankments shall be subject to approval by the RPR. All unsuitable material shall be disposed of in waste areas as shown on the plans. All waste areas shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the RPR.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Areas outside the limits of the pavement areas where the top layer of soil has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches (100 mm), to loosen and pulverize the soil. Stones or rock fragments larger than 4 inches (100 mm) in their greatest dimension will not be permitted in the top 6 inches (150 mm) of the subgrade.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the RPR, who shall arrange for their removal if necessary. The Contractor, at their own expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

**a. Blasting.** ~~Blasting shall not be allowed. [Blasting will be permitted as directed by the RPR and in accordance with the following:]~~

~~Blasting will be permitted only when proper precautions are taken for the safety of all persons, work, and property. All damage done to the work or property shall be repaired by the Contractor. The cost of repair is incidental to this item. All operations of the Contractor in connection with the transportation, storage, and use of explosives shall conform to all federal, state and local regulations and explosive manufacturers' instructions, with applicable approved permits reviewed by the RPR. Any approval will not relieve the Contractor of their responsibility in blasting operations.~~

~~Where blasting is approved, the Contractor shall employ a vibration consultant, approved by the RPR, to advise on explosive charge weights per delay and to analyze records from seismograph recordings. The seismograph shall be capable of producing a permanent record of the three components of the motion in terms of particle velocity, and in addition shall be capable of internal dynamic calibration.~~

~~In each distinct blasting area, where pertinent factors affecting blast vibrations and their effects in the area remain the same, the Contractor shall submit a blasting plan of the initial blasts to the RPR for approval. This plan must consist of hole size, depth, spacing, burden, type of explosives, type of delay sequence, maximum amount of explosive on any one delay period, depth of rock, and depth of overburden if any. The maximum explosive charge weights per delay included in the plan shall not be increased without the approval of the RPR.~~

~~The Contractor shall keep a record of each blast: its date, time and location; the amount of explosives used, maximum explosive charge weight per delay period, and, where necessary, seismograph records identified by instrument number and location.~~

~~Blasting and explosive storage shall be in accordance with Section 70, paragraph 70-09 and all federal, state, and local safety regulations.~~

~~These records shall be made available to the RPR on a monthly basis or in tabulated form at other times as required. }~~

**152-2.2 Excavation.** No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and RPR shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

~~{ Digital terrain model (DTM) files of the existing surfaces, finished surfaces and other various surfaces were used to develop the design plans.~~

~~{ Volumetric quantities were calculated by comparing DTM files of the applicable design surfaces and generating Triangle Volume Reports. Electronic copies of DTM files and a paper copy of the original topographic map will be issued to the successful bidder. }~~

~~{ Volumetric quantities were calculated using design cross sections which were created for this project using the DTM files of the applicable design surfaces and generating End Area Volume Reports. Paper copies of design cross sections and a paper copy of the original topographic map will be issued to the successful bidder. }~~

~~Existing grades on the design cross sections or DTM's, where they do not match the locations of actual spot elevations shown on the topographic map, were developed by computer interpolation from those spot elevations. Prior to disturbing original grade, Contractor shall verify the accuracy of the existing ground surface by verifying spot elevations at the same locations where original field survey data was obtained as indicated on the topographic map. Contractor shall recognize that, due to the interpolation process, the actual ground surface at any particular location may differ somewhat from the interpolated surface shown on the design cross sections or obtained from the DTM's. Contractor's verification of original ground surface, however, shall be limited to verification of spot elevations as~~

~~indicated herein, and no adjustments will be made to the original ground surface unless the Contractor demonstrates that spot elevations shown are incorrect. For this purpose, spot elevations which are within [ 0.1 foot (30 mm) ] of the stated elevations for ground surfaces, or within [ 0.04 foot (12 mm) ] for hard surfaces (pavements, buildings, foundations, structures, etc.) shall be considered "no change". Only deviations in excess of these will be considered for adjustment of the original ground surface. If Contractor's verification identifies discrepancies in the topographic map, Contractor shall notify the RPR in writing at least [ two weeks ] before disturbance of existing grade to allow sufficient time to verify the submitted information and make adjustments to the design cross sections or DTM's. Disturbance of existing grade in any area shall constitute acceptance by the Contractor of the accuracy of the original elevations shown on the topographic map for that area. ]~~

~~All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the RPR. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes as shown on the plans. All unsuitable material shall be disposed of as shown on the plans.~~

~~The grade shall be maintained so that the surface is well drained at all times.~~

~~When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.~~

**a. Selective grading.** When selective grading is indicated on the plans, the more suitable material designated by the RPR shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas until it can be placed. The more suitable material shall then be placed and compacted as specified. Selective grading shall be considered incidental to the work involved. The cost of stockpiling and placing the material shall be included in the various pay items of work involved.

**b. Undercutting.** Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turf shall be excavated to a minimum depth of 12 inches (300 mm) below the subgrade or to the depth specified by the RPR. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be ~~[ disposed of at locations shown on the plans. ] [ disposed off the airport. The cost is incidental to this item. ]~~ This excavated material shall be paid for at the contract unit price per cubic yard (per cubic meter) for [ \_\_\_\_ ]. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a part of the embankment. Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained in accordance with the details shown on the plans. Undercutting will be paid as ~~[ unclassified excavation ] [ rock excavation ]~~.

**c. Over-break.** Over-break, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the RPR. All over-break shall be graded or removed by the Contractor and disposed of as directed by the RPR. The RPR shall determine if the displacement of such material was unavoidable and their own decision shall be final. Payment will not be made for the removal and disposal of over-break that the RPR determines as avoidable. Unavoidable over-break will be classified as "Unclassified Excavation."

**d. Removal of utilities.** The removal of existing structures and utilities required to permit the orderly progress of work will be accomplished **transformer by FPL and others by contractor**. All existing foundations shall be excavated at least 2 feet (60 cm) below the top of subgrade or as indicated on the plans, and the material disposed of as directed by the RPR. All foundations thus excavated shall be backfilled with suitable material and compacted as specified for embankment or as shown on the plans.

~~**152-2.3 Borrow excavation.** [ Borrow areas are not required. ] [ Borrow areas within the airport property are indicated on the plans. Borrow excavation shall be made only at these designated locations and within the horizontal and vertical limits as staked or as directed by the RPR. All unsuitable material shall be disposed of by the Contractor as shown on the plans. All borrow pits shall be opened to expose the various strata of acceptable material to allow obtaining a uniform product. Borrow areas shall be drained and left in a neat, presentable condition with all slopes dressed uniformly. Borrow areas shall not create a hazardous wildlife attractant. [ ] ]~~

~~[ There are no borrow sources within the boundaries of the airport property. The Contractor shall locate and obtain borrow sources, subject to the approval of the RPR. The Contractor shall notify the RPR at least [ 15 ] days prior to beginning the excavation so necessary measurements and tests can be made by the RPR. All borrow pits shall be opened to expose the various strata of acceptable material to allow obtaining a uniform product. Borrow areas shall be drained and left in a neat, presentable condition with all slopes dressed uniformly. Borrow areas shall not create a hazardous wildlife attractant. [ ] ]~~

**152-2.4 Drainage excavation.** Drainage excavation shall consist of excavating drainage ditches including intercepting, inlet, or outlet ditches; or other types as shown on the plans. The work shall be performed in sequence with the other construction. Ditches shall be constructed prior to starting adjacent excavation operations. All satisfactory material shall be placed in embankment fills; unsuitable material shall be placed in designated waste areas or as directed by the RPR. All necessary work shall be performed true to final line, elevation, and cross-section. The Contractor shall maintain ditches constructed on the project to the required cross-section and shall keep them free of debris or obstructions until the project is accepted.

~~**152-2.5 Preparation of cut areas or areas where existing pavement has been removed.** In those areas on which a subbase or base course is to be placed, the top [ 12 inches (300 mm) ] of subgrade shall be compacted to not less than [ 100 % ] of maximum density for non-cohesive soils, and [ 95 % ] of maximum density for cohesive soils as determined by ASTM [ ]. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.~~

**152-2.6 Preparation of embankment area.** All sod and vegetative matter shall be removed

from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches (150 mm) and shall then be compacted per paragraph 152-2.10.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches (300 mm) and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

**152-2.7 Control Strip.** The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of this specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches (300 mm) upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

**152-2.8 Formation of embankments.** The material shall be constructed in lifts as established in the control strip, but not less than 6 inches (150 mm) nor more than 12 inches (300 mm) of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications. The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the RPR. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times. The material in each lift shall be within  $\pm 2\%$  of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The **contractor** will take samples of excavated materials which will be used in embankment for

testing and develop a Moisture-Density Relations of Soils Report (Proctor) in accordance with **D 1557**. A new Proctor shall be developed for each soil type based on visual classification. Density tests will be taken by the **contractor** for every **1,000** square yards of compacted embankment for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch (19.0 mm) sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than **95%** of maximum density for non-cohesive soils, and **95%** of maximum density for cohesive soils as determined by ASTM **D6938**. Under all areas to be paved, the embankments shall be compacted to a depth of **12"** and to a density of not less than **98%** percent of the maximum density as determined by ASTM **D6938**. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

On all areas outside of the pavement areas, no compaction will be required on the top **6 inches (152 mm)** which shall be prepared for a seedbed in accordance with **Item T-901**.

The in-place field density shall be determined in accordance with ASTM **D1556** **ASTM 6938** **using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the test results upon completion to the RPR for acceptance.** If the specified density is not attained, the area represented by the test or as designated by the RPR shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

Compaction areas shall be kept separate, and no lift shall be covered by another lift until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches (100 mm) in their greatest dimensions will not be allowed in the top 12 inches (300 mm) of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in lifts not exceeding 2 feet (60 cm) in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet (1.2 m) below the finished subgrade.



**There will be no separate measurement of payment for compacted embankment. All costs incidental to placing in lifts, compacting, discing, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for excavation, borrow, or other items.**

**152-2.9 Proof rolling.** ~~Not Used~~ The purpose of proof rolling the subgrade is to identify any weak areas in the subgrade and not for compaction of the subgrade. ~~Before start of embankment, and After compaction is completed, the subgrade area shall be proof rolled with a 20-ton (18.1 metric ton) Tandem axle Dual Wheel Dump Truck loaded to the legal limit with tires inflated to 80/100/150 psi (0.551 MPa/0.689 MPa/1.034 MPa) ton Proof Roller with tires spaced not more than 32 inches (0.8 m) on-center with tires inflated to 100/125/150 psi (0.689 MPa/0.861 MPa/1.034 MPa) in the presence of the RPR. Apply a minimum of coverage, or as specified by the RPR, under pavement areas. A coverage is defined as the application of one tire print over the designated area. Soft areas of subgrade that deflect more than 1 inch (25 mm) or show permanent deformation greater than 1 inch (25 mm) shall be removed and replaced with suitable material or reworked to conform to the moisture content and compaction requirements in accordance with these specifications. Removal and replacement of soft areas is incidental to this item.~~

**152-2.10 Compaction requirements.** The subgrade under areas to be paved shall be compacted to a depth of ~~12 inches (300 mm)~~ and to a density of not less than ~~100~~ percent of the maximum dry density as determined by ASTM ~~D1557~~ ~~D698~~. The subgrade in areas outside the limits of the pavement areas shall be compacted to a depth of ~~12 inches (300 mm)~~ and to a density of not less than ~~95~~ percent of the maximum density as determined by ASTM ~~D698~~.

The material to be compacted shall be within  $\pm 2\%$  of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils). When the material has greater than 30 percent retained on the  $\frac{3}{4}$  inch (19.0 mm) sieve, follow the ~~methods in ASTM D698~~ ~~ASTM D1557~~ ~~procedures in AASHTO T180 Annex for correction of maximum dry density and optimum moisture for oversized particles.~~ Tests for moisture content and compaction will be taken at a minimum of ~~of~~ S.Y. of subgrade. All quality assurance testing shall be done by ~~the RPR.~~ ~~the Contractor's laboratory in the presence of the RPR, and density test results shall be furnished upon completion to the RPR for acceptance determination.~~

The in-place field density shall be determined in accordance with **ASTM D6938**.

Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment

shown on the plans or as directed by the RPR and the finished subgrade shall be maintained.

**152-2.11 Finishing and protection of subgrade.** Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. All low areas, holes or depressions in the subgrade shall be brought to grade. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the RPR.

**152-2.12 Haul.** All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

**152-2.13 Surface Tolerances.** In those areas on which a subbase or base course is to be placed, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches (75 mm), reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

- a. **Smoothness.** The finished surface shall not vary more than  $\pm \frac{1}{2}$  inch (12 mm) when tested with a 12-foot (3.7-m) straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot (3.7-m) straightedge for the full length of each line on a 50-foot (15-m) grid.
- b. **Grade.** The grade and crown shall be measured on a 50-foot (15-m) grid and shall be within  $\pm 0.05$  feet (15 mm) of the specified grade.

On safety areas, turfed areas and other designated areas within the grading limits where no subbase or base is to be placed, grade shall not vary more than 0.10 feet (30 mm) from specified grade. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

**152-2.14 Topsoil.** When topsoil is specified or required as shown on the plans or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be

placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall be located as shown on the plans and the approved CSPP, and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the RPR, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further re-handling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as shown on the plans and as required in Item T-905. Topsoil shall be paid for as provided in Item T-905. No direct payment will be made for topsoil under Item P-152.

### METHOD OF MEASUREMENT

**152-3.1** Measurement for payment specified by the cubic yard (cubic meter) shall be computed by the **average end areas of design cross sections**. The end area is that bound by the original ground line established by field cross-sections and the final theoretical pay line established by cross-sections shown on the plans, subject to verification by the RPR.

**152-3.1 Lump sum for ditch and CY for dry retention area. No payment for restoration under demo areas.**

**[152-3.2 The quantity of embankment in place shall be the number of cubic yards (cubic meters) measured in its final position.]**

~~[152-3.3] Stockpiled material shall be paid for on the basis of the number of cubic yards (cubic meters) measured in the stockpiled position. [ Stockpiled material shall not be measured for payment in the stockpiled position. ]~~

### BASIS OF PAYMENT

~~**152-4.1 Lump sum** payment shall be made at the contract unit price per cubic yard (cubic meter). This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.~~

**152-4.2 For embankment in place, payment shall be made at the contract unit price per cubic yard (cubic meter) for DRA. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.**

~~[152-4.3 Stockpiled material shall be paid for on the basis of the number of cubic yards (cubic meters) measured in the stockpiled position.]~~

Payment will be made under:

~~**Item P-152-4.1 Unclassified**~~

**Item P-152-4.2 Embankment in place - per cubic yard (cubic meter)**

~~[Item P-152-4.3 Stockpiled material - per cubic yard (cubic meter)]~~

## REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180      Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

ASTM International (ASTM)

ASTM D698      Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))

ASTM D1556      Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method

ASTM D1557      Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2700 kN-m/m<sup>3</sup>))

ASTM D6938      Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

Advisory Circulars (AC)

AC 150/5370-2 Operational Safety on Airports During Construction Software  
Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

FAA RD-76-66 Design and Construction of Airport Pavements on Expansive Soils

**END OF ITEM P-152**

## ITEM D-701

### PIPE FOR STORM DRAINS AND CULVERTS

#### DESCRIPTION

**701-1.1** This item shall consist of the construction of pipe culverts and storm drains in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans.

#### MATERIALS

**701-2.1** Materials shall meet the requirements shown on the plans and specified below. Underground piping and components used in drainage systems for terminal and aircraft fueling ramp drainage shall be noncombustible and inert to fuel in accordance with National Fire Protection Association (NFPA) 415.

**701-2.2 Pipe.** The pipe shall be of the type called for on the plans or in the proposal and shall be in accordance with the following appropriate requirements:

American Association of State Highway and Transportation Officials  
(AASHTO) M167  
Standard Specification for Corrugated Steel Structural  
Plate, Zinc-Coated, for Field-Bolted Pipe, Pipe-  
Arches, and Arches

AASHTO M190      Standard Specification for Bituminous-Coated  
Corrugated Metal Culvert Pipe and Pipe Arches

AASHTO M196      Standard Specification for Corrugated Aluminum Pipe  
for Sewers and Drains

AASHTO M219      Standard Specification for Corrugated Aluminum Alloy  
Structural Plate for Field-Bolted Pipe, Pipe-Arches,  
and Arches

AASHTO M243      Standard Specification for Field-Applied Coating of  
Corrugated Metal Structural Plate for Pipe, Pipe-  
Arches, and Arches

AASHTO M252      Standard Specification for Corrugated Polyethylene  
Drainage Pipe

AASHTO M294      Standard Specification for Corrugated Polyethylene  
Pipe, 300- to 1500-mm (12- to 60-in.) Diameter

AASHTO M304      Standard Specification for Poly (Vinyl Chloride) (PVC)  
Profile Wall Drain Pipe and Fittings Based on  
Controlled Inside Diameter

AASHTO MP20	Standard Specification for Steel Reinforced Polyethylene (PE) Ribbed Pipe, 300- to 900-mm (12- to 36-in.) Diameter
AASHTO R73	Standard Practice for Evaluation of Precast Concrete Drainage Productions
ASTM A760	Standard Specification for Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains
ASTM A761	Standard Specification for Corrugated Structural Steel Plate, Zinc-Coated, for Field-Bolted Pipe, Pipe-Arches, and Arches
ASTM A762	Standard Specification for Corrugated Steel Pipe, Polymer Precoated for Sewers and Drains
ASTM A849	Standard Specification for Post Applied Coatings, Pavings, and Linings for Corrugated Steel Sewer and Drainage Pipe
ASTM B745	Standard Specification for Corrugated Aluminum Pipe for Sewers and Drains
ASTM C14	Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe
ASTM C76	Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C506	Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
ASTM C507	Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe
ASTM C655	Standard Specification for Reinforced Concrete D-Load Culvert, Storm Drain, and Sewer Pipe
ASTM C1433	Standard Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers
ASTM C1479	Standard Practice for Installation of Precast Concrete Sewer, Storm Drain, and Culvert Pipe Using Standard Installations
ASTM C1577	Standard Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers Designed According to AASHTO LRFD

- ASTM C1786 Standard Specification for Segmental Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers Designed According to AASHTO LRFD
- ASTM C1840 Standard Practice for Inspection and Acceptance of Installed Reinforced Concrete Culvert, Storm Drain, and Storm Sewer Pipe
- ASTM D3262 Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer Pipe
- ASTM D4161 Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Joints Using Flexible Elastomeric Seals
- ASTM F667 Standard Specification for 3 through 24 in Corrugated Polyethylene Pipe and Fittings
- ASTM F714 Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter
- ASTM F794 Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter
- ASTM F894 Standard Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe
- ASTM F949 Standard Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings
- ASTM F2435 Standard Specification for Steel Reinforced Polyethylene (PE) Corrugated Pipe
- ASTM F2562 Specification for Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage
- ASTM F2736 Standard Specification for 6 to 30 in. (152 to 762 mm) Polypropylene (PP) Corrugated Single Wall Pipe and Double Wall Pipe
- ASTM F2764 Standard Specification for 30 to 60 in. (750 to 1500 mm) Polypropylene (PP) Triple Wall Pipe and Fittings for Non-Pressure Sanitary Sewer Applications
- ASTM F2881 Standard Specification for 12 to 60 in. (300 to 1500 mm) Polypropylene (PP) Dual Wall Pipe and Fittings for Non-Pressure Storm Sewer Applications

ASTM D3034 Standard Specification for Type PSM Poly (Vinyl Chloride)  
(PVC) Sewer Pipe and Fittings

**701-2.3 Concrete.** Concrete for pipe cradles shall have a minimum compressive strength of 3000 psi (20.7 MPa) at 28 days and conform to the requirements of ASTM C94.

**701-2.4 Rubber gaskets.** Not used.

**701-2.5 Joint mortar.** Pipe joint mortar shall consist of one part Portland cement and two parts sand. The Portland cement shall conform to the requirements of ASTM C150, Type I. The sand shall conform to the requirements of ASTM C144.

**701-2.6 Joint fillers.** Not used.

**701-2.7 Plastic gaskets.** Not used.

~~**701-2.8. Controlled low-strength material (CLSM).** Controlled low-strength material shall conform to the requirements of Item P-153. When CLSM is used, all joints shall have gaskets.~~

**701-2.9 Precast box culverts.** Manufactured in accordance with and conforming to ASTM C1433.

**701-2.10 Precast concrete pipe.** Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or American Concrete Pipe Association QCast Plant Certification program.

## CONSTRUCTION METHODS

**701-3.1 Excavation.** The width of the pipe trench shall be sufficient to permit satisfactory jointing of the pipe and thorough tamping of the bedding material under and around the pipe, but it shall not be less than the external diameter of the pipe plus 12 inches (300 mm) on each side. The trench walls shall be approximately vertical.

The Contractor shall comply with all current federal, state and local rules and regulations governing the safety of men and materials during the excavation, installation and backfilling operations. Specifically, the Contractor shall observe that all requirements of the Occupational Safety and Health Administration (OSHA) relating to excavations, trenching and shoring are strictly adhered to. The width of the trench shall be sufficient to permit satisfactory jointing of the pipe and thorough compaction of the bedding material under the pipe and backfill material around the pipe, but it shall not be greater than the widths shown on the plans trench detail. Where rock, hardpan, or other unyielding material is encountered, the Contractor shall remove it from below the foundation grade for a depth of at least 8 inch (200 mm) or 1/2 inch (12 mm) for each foot of fill over the top of the pipe (whichever is greater) but for no more than three-quarters of the nominal diameter of the pipe. The excavation below grade should be filled with granular material to form a uniform foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved granular material for the full trench width. The RPR shall determine the depth of removal necessary. The granular material shall be compacted to provide adequate support for the pipe.

The excavation for pipes placed in embankment fill shall not be made until the embankment has been completed to a height above the top of the pipe as shown on the plans.

**701-3.2 Bedding.** The bedding surface for the pipe shall provide a foundation of uniform density to support the pipe throughout its entire length.



**a. Rigid pipe.** The pipe bedding shall be constructed uniformly for the full length of the pipe barrel, as required on the plans. The maximum aggregate size shall be 1 in when the bedding thickness is less than 6 inches, and 1-1/2 in when the bedding thickness is greater than 6 inches. Bedding shall be loosely placed uncompacted material under the middle third of the pipe prior to placement of the pipe.

**b. Flexible pipe.** For flexible pipe, the bed shall be roughly shaped to fit the pipe, and a bedding blanket of sand or fine granular material shall be provided as follows:

**Flexible Pipe Bedding**

Pipe Corrugation Depth		Minimum Bedding Depth	
inch	mm	inch	mm
1/2	12	1	25
1	25	2	50
2	50	3	75
2-1/2	60	3-1/2	90

**c. Other pipe materials.** For PVC, polyethylene, polypropylene, or fiberglass pipe, the bedding material shall consist of coarse sands and gravels with a maximum particle size of 3/4 inches (19 mm). For pipes installed under paved areas, no more than 12% of the material shall pass the No. 200 (0.075 mm) sieve. For all other areas, no more than 50% of the material shall pass the No. 200 (0.075 mm) sieve. The bedding shall have a thickness of at least 6 inches (150 mm) below the bottom of the pipe and extend up around the pipe for a depth of not less than 50% of the pipe's vertical outside diameter.

**701-3.3 Laying pipe.** The pipe laying shall begin at the lowest point of the trench and proceed upgrade. The lower segment of the pipe shall be in contact with the bedding throughout its full length. Bell or groove ends of rigid pipes and outside circumferential laps of flexible pipes shall be placed facing upgrade.

Paved or partially lined pipe shall be placed so that the longitudinal center line of the paved segment coincides with the flow line.

Elliptical and elliptically reinforced concrete pipes shall be placed with the manufacturer's reference lines designating the top of the pipe within five degrees of a vertical plane through the longitudinal axis of the pipe.

**701-3.4 Joining pipe.** Joints shall be made with **rubber gaskets**.

Mortar joints shall be made with an excess of mortar to form a continuous bead around the outside of the pipe and shall be finished smooth on the inside. Molds or runners shall be used for grouted joints to retain the poured grout. Rubber ring gaskets shall be installed to form a flexible watertight seal.

**a. Concrete pipe.** Concrete pipe may be either bell and spigot or tongue and groove. Pipe sections at joints shall be fully seated and the inner surfaces flush and even. **Concrete pipe joints shall be sealed with rubber gaskets meeting ASTM C443 when leak resistant joints are required.**

**b. Metal pipe.** Metal pipe shall be firmly joined by form-fitting bands conforming to the requirements of ASTM A760 for steel pipe and AASHTO M196 for aluminum pipe.

**c. PVC, Polyethylene, or Polypropylene pipe.** Joints for PVC, Polyethylene, or Polypropylene pipe shall conform to the requirements of ASTM D3212 when leak resistant joints are required. Joints for PVC

~~and Polyethylene pipe shall conform to the requirements of AASHTO M304 when soil tight joints are required. Fittings for polyethylene pipe shall conform to the requirements of AASHTO M252 or ASTM M294. Fittings for polypropylene pipe shall conform to ASTM F2881, ASTM F2736, or ASTM F2764.~~

~~**d. Fiberglass pipe.** Joints and fittings shall be as detailed on the plans and in accordance with the manufacturers recommendations. Joints shall meet the requirements of ASTM D4161 for flexible elastomeric seals. Enter manufacturers joint installation requirements.~~

**701-3.5 Embedment and Overfill.** Pipes shall be inspected before any fill material is placed; any pipes found to be out of alignment, unduly settled, or damaged shall be removed and re-laid or replaced at the Contractor's expense.

#### **701-3.5-1 Embedment Material Requirements**

**a. Concrete Pipe.** Embedment material and compaction requirements shall be in accordance with the applicable Type of Standard Installation (Types 1, 2, 3, or 4) per ASTM C1479. If a concrete cradle or CLSM embedment material is used, it shall conform to the plan details.

~~**b. Plastic and fiberglass Pipe.** Embedment material shall meet the requirements of ASTM D3282, A-1, A-2-4, A-2-5, or A-3. Embedment material shall be free of organic material, stones larger than 1.5 inches in the greatest dimension, or frozen lumps. Embedment material shall extend to 12 inches above the top of the pipe.~~

**c. Metal Pipe.** Embedment material shall be granular as specified in the contract document and specifications, and shall be free of organic material, rock fragments larger than 1.5 inches in the greatest dimension and frozen lumps. As a minimum, backfill materials shall meet the requirements of ASTM D3282, A-1, A-2, or A-3. Embedment material shall extend to 12 inches above the top of the pipe.

#### **701-3.5-2 Placement of Embedment Material**

The embedment material shall be compacted in layers not exceeding 6 inches (150 mm) on each side of the pipe and shall be brought up one foot (30 cm) above the top of the pipe or to natural ground level, whichever is greater. Thoroughly compact the embedment material under the haunches of the pipe without displacing the pipe. Material shall be brought up evenly on each side of the pipe for the full length of the pipe.

When the top of the pipe is above the top of the trench, the embedment material shall be compacted in layers not exceeding 6 inches (150 mm) and shall be brought up evenly on each side of the pipe to one foot (30 cm) above the top of the pipe. All embedment material shall be compacted to a density required under Item P-152.

Concrete cradles and flowable fills, such as controlled low strength material (CLSM) or controlled density fill (CDF), may be used for embedment provided adequate flotation resistance can be achieved by restraints, weighing, or placement technique.

It shall be the Contractor's responsibility to protect installed pipes and culverts from damage due to construction equipment operations. The Contractor shall be responsible for installation of any extra strutting or backfill required to protect pipes from the construction equipment.

#### **701-3.6 Overfill**

Pipes shall be inspected before any overfill is in place. Any pipes found to be out of alignment, unduly settled, or damaged shall be removed and relaid or replaced at the Contractor's expense.

Evaluation of any damage to RCP shall be evaluated based on AASHTO R73.

Overfill material shall be placed and compacted in layers as required to achieve compaction to at least 95 percent standard proctor per **ASTM D1557**. The soil shall contain no debris, organic matter, frozen material, or stones with a diameter greater than one half the thickness of the compacted layers being placed.

### **701-3.7 Inspection Requirements**

An initial post installation inspection shall be performed by the RPR no sooner than 30 days after completion of installation and final backfill. Clean or flush all lines prior to inspection.

~~{ Use a camera with lighting suitable to allow a clear picture of the entire periphery of the pipe interior. Center the camera in the pipe both vertically and horizontally and be able to pan and tilt to a 90 degree angle with the axis of the pipe rotating 360 degrees. Use equipment to move the camera through the pipe that will not obstruct the camera's view or interfere with proper documentation of the pipe's condition. The video image shall be clear, focused, and relatively free from roll, static, or other image distortion qualities that would prevent the reviewer from evaluating the condition of the pipe. }~~

~~{ For pipe sizes larger than 48 inches, a walk-through visual inspection shall be performed. }~~

Incorporate specific inspection requirements for the various types of pipes beneath the general inspection requirements.

**Reinforced concrete pipe shall be inspected, evaluated, and reported on in accordance with ASTM C1840, "Standard Practice for Inspection and Acceptance of Installed Reinforced Concrete Culvert, Storm Drain, and Storm Sewer Pipe." Any issues reported shall include still photo and video documentation. The zoom ratio shall be provided for all still or video images that document any issues of concern by the inspection firm.**

~~{ Flexible pipes shall be inspected for rips, tears, joint separations, soil migration, cracks, localized buckling, settlement, alignment, and deflection. } { Determine whether the allowable deflection has been exceeded by use of a laser profiler for internal pipe diameters of 48 inches or less, or direct measurement for internal pipe diameters greater than 48 inches. Laser profile equipment shall utilize low barrel distortion video equipment. Deflection of installed pipe shall not exceed the limits provided in the table below, as a percentage of the average inside diameter of the pipe. }~~

~~Maximum Allowable Pipe Deflection~~

<del>Type of Pipe</del>	<del>Maximum Allowable Deflection (%)</del>
<del>Corrugated Metal Pipe</del>	<del>5</del>
<del>Concrete Lined CMP</del>	<del>3</del>
<del>Thermoplastic Pipe</del>	<del>5</del>
<del>Fiberglass</del>	<del>5</del>

~~If deflection readings in excess of the allowable deflection are obtained, remove the pipe with excessive deflection and replace with new pipe. Isolated areas may exceed allowable by 2.5% with concurrence of RPR. Repair or replace any pipe with cracks exhibiting~~

~~displacement across the crack, bulges, creases, tears, spalls, or delaminations. The report for flexible pipe shall include as a minimum, the deflection results and final post installation inspection report. The inspection report shall include: a copy of all video taken, pipe location identification, equipment used for inspection, inspector name, deviation from design line and grade, and inspector's notes.~~

### METHOD OF MEASUREMENT

**701-4.1** The length of pipe shall be measured in linear feet (m) of pipe in place, completed, and accepted. It shall be measured along the centerline of the pipe from end or inside face of structure to the end or inside face of structure, whichever is applicable. The **installed pipe length** shall be measured separately. All fittings shall be included in the footage as typical pipe sections in the pipe being measured.

**701-4.2. Not used.**

**701-4.3 Not used.**

**701-4.4 Not used.**

### BASIS OF PAYMENT

**701-5.0** These prices shall fully compensate the Contractor for furnishing all materials and for all preparation, excavation, and installation of these materials; and for all labor, equipment, tools, and incidentals necessary to complete the item, **including backfill and testing.**

**701-5.1** Payment will be made at the contract unit price per linear foot (LF) for **identify each class and size of pipe.**

**701-5.2 Not used.**

**701-5.3 Not used.**

**701-5.4 Not used.**

Payment will be made under:

Item 701-5.1    **36" inch RCP Class V per linear foot (LF)**

~~Item 701-5.2    [ Precast box culvert per unit. ] [ Not used. ]~~

~~Item 701-5.3    [ Concrete for pipe cradles - per cubic yard (cubic meter) ] [ Not used. ]~~

~~Item 701-5.4    [ Rock, hardpan, or other unyielding material excavation - per cubic yard (cubic meter) ] [ Not used. ]~~

### REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO M167	Standard Specification for Corrugated Steel Structural Plate, Zinc-Coated, for Field-Bolted Pipe, Pipe-Arches, and Arches
AASHTO M190	Standard Specification for Bituminous-Coated Corrugated Metal Culvert Pipe and Pipe Arches
AASHTO M196	Standard Specification for Corrugated Aluminum Pipe for Sewers and Drains
AASHTO M219	Standard Specification for Corrugated Aluminum Alloy Structural Plate for Field-Bolted Pipe, Pipe-Arches, and Arches
AASHTO M243	Standard Specification for Field Applied Coating of Corrugated Metal Structural Plate for Pipe, Pipe-Arches, and Arches
AASHTO M252	Standard Specification for Corrugated Polyethylene Drainage Pipe
AASHTO M294	Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter
AASHTO M304	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter
AASHTO MP20	Standard Specification for Steel Reinforced Polyethylene (PE) Ribbed Pipe, 300- to 900-mm (12- to 36-in.) Diameter

ASTM International (ASTM)

ASTM A760	Standard Specification for Corrugated Steel Pipe, Metallic Coated for Sewers and Drains
ASTM A761	Standard Specification for Corrugated Steel Structural Plate, Zinc Coated, for Field-Bolted Pipe, Pipe-Arches, and Arches
ASTM A762	Standard Specification for Corrugated Steel Pipe, Polymer Precoated for Sewers and Drains
ASTM A849	Standard Specification for Post-Applied Coatings, Pavings, and Linings for Corrugated Steel Sewer and Drainage Pipe
ASTM B745	Standard Specification for Corrugated Aluminum Pipe for Sewers and Drains
ASTM C14	Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe
ASTM C76	Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C94	Standard Specification for Ready Mixed Concrete
ASTM C144	Standard Specification for Aggregate for Masonry Mortar
ASTM C150	Standard Specification for Portland Cement

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ASTM C443	Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
ASTM C506	Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
ASTM C507	Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain and Sewer Pipe
ASTM C655	Standard Specification for Reinforced Concrete D-Load Culvert, Storm Drain and Sewer Pipe
ASTM C990	Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
ASTM C1433	Standard Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers
ASTM D1056	Standard Specification for Flexible Cellular Materials Sponge or Expanded Rubber
ASTM D3034	Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM D3212	Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM D3262	Standard Specification for "Fiberglass" (Glass-Fiber Reinforced Thermosetting Resin) Sewer Pipe
ASTM D3282	Standard Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
ASTM D4161	Standard Specification for "Fiberglass" (Glass-Fiber Reinforced Thermosetting Resin) Pipe Joints Using Flexible Elastomeric Seals
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
ASTM F477	Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F667	Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings
ASTM F714	Standard Specification for Polyethylene (PE) Plastic Pipe (DR PR) Based on Outside Diameter
ASTM F794	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe & Fittings Based on Controlled Inside Diameter
ASTM F894	Standard Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe
ASTM F949	Standard Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings

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- END ITEM D-701**

## ITEM D-751

### MANHOLES, CATCH BASINS, INLETS AND INSPECTION HOLES

#### DESCRIPTION

**751-1.1** This item shall consist of construction of manholes, catch basins, inlets, and inspection holes, in accordance with these specifications, at the specified locations and conforming to the lines, grades, and dimensions shown on the plans or required by the RPR.

#### MATERIALS

**751-2.1 Brick.** The brick shall conform to the requirements of ASTM C32, Grade MS.

**751-2.2 Mortar.** Mortar shall consist of one part Portland cement and two parts sand. The cement shall conform to the requirements of ASTM C150, Type I. The sand shall conform to the requirements of ASTM C144.

**751-2.3 Concrete.** Plain and reinforced concrete used in structures, connections of pipes with structures, and the support of structures or frames shall conform to the requirements of Item P-610.

**751-2.4 Precast concrete pipe manhole rings.** Precast concrete pipe manhole rings shall conform to the requirements of ASTM C478. Unless otherwise specified, the risers and offset cone sections shall have an inside diameter of not less than 36 inches (90 cm) nor more than 48 inches (120 cm). There shall be a gasket between individual sections and sections cemented together with mortar on the inside of the manhole. Gaskets shall conform to the requirements of ASTM C443.

**751-2.5 Corrugated metal.** Corrugated metal shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M36.

**751-2.6 Frames, covers, and grates.** The castings shall conform to one of the following requirements:

- a. ASTM A48, Class 35B: Gray iron castings
- b. ASTM A47: Malleable iron castings
- c. ASTM A27: Steel castings
- d. ASTM A283, Grade D: Structural steel for grates and frames
- e. ASTM A536, Grade 65-45-12: Ductile iron castings
- f. ASTM A897: Austempered ductile iron castings

All castings or structural steel units shall conform to the dimensions shown on the plans and shall be designed to support the loadings, aircraft gear configuration and/or direct loading, specified. Each frame and cover or grate unit shall be provided with fastening members to prevent it from being dislodged by traffic but which will allow easy removal for access to the structure. All castings shall be thoroughly cleaned. After fabrication, structural steel units shall be galvanized to meet the requirements of ASTM A123.

**751-2.7 Steps.** The steps or ladder bars shall be gray or malleable cast iron or galvanized steel.



The steps shall be the size, length, and shape shown on the plans and those steps that are not galvanized shall be given a coat of asphalt paint, when directed.

**751-2.8 Precast inlet structures.** Manufactured in accordance with and conforming to ASTM C913.

## CONSTRUCTION METHODS

### 751-3.1 Unclassified excavation.

**a.** The Contractor shall excavate for structures and footings to the lines and grades or elevations, shown on the plans, or as staked by the RPR. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or structure footings shown. The elevations of the bottoms of footings, as shown on the plans, shall be considered as approximately only; and the RPR may direct, in writing, changes in dimensions or elevations of footings necessary for a satisfactory foundation.

**b.** Boulders, logs, or any other objectionable material encountered in excavation shall be removed. All rock or other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped, or serrated, as directed by the RPR. All seams or crevices shall be cleaned out and grouted. All loose and disintegrated rock and thin strata shall be removed. Where concrete will rest on a surface other than rock, the bottom of the excavation shall not be disturbed and excavation to final grade shall not be made until immediately before the concrete or reinforcing is placed.

**c.** The Contractor shall do all bracing, sheathing, or shoring necessary to implement and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheathing, or shoring shall be included in the unit price bid for the structure.

**d.** All bracing, sheathing, or shoring involved in the construction of this item shall be removed by the Contractor after the completion of the structure. Removal shall not disturb or damage finished masonry. The cost of removal shall be included in the unit price bid for the structure.

**e.** After excavation is completed for each structure, the Contractor shall notify the RPR. No concrete or reinforcing steel shall be placed until the RPR has approved the depth of the excavation and the character of the foundation material.

### 751-3.2 Brick structures.

**a. Foundations.** A prepared foundation shall be placed for all brick structures after the foundation excavation is completed and accepted. Unless otherwise specified, the base shall consist of reinforced concrete mixed, prepared, and placed in accordance with the requirements of Item P-610.

**b. Laying brick.** All brick shall be clean and thoroughly wet before laying so that they will not absorb any appreciable amount of additional water at the time they are laid. All brick shall be laid in freshly made mortar. Mortar not used within 45 minutes after water has been added shall be discarded. Retempering of mortar shall not be permitted. An ample layer of mortar shall be spread on the beds and a shallow furrow shall be made in it that can be readily closed by the laying of the brick. All bed and head joints shall be filled solid with mortar. End joints of stretchers and side or cross joints of headers shall be fully buttered with mortar and a shoved joint made to squeeze out mortar at the top of the joint. Any bricks that may be loosened after the mortar has taken its set, shall be removed, cleaned, and re-laid with fresh mortar. No broken or chipped brick shall be used in the face, and no spalls or bats shall be used except where necessary to shape around irregular openings or edges; in which case, full bricks shall be placed at ends or corners where possible, and the bats shall be used in the interior of the course. In making

closures, no piece of brick shorter than the width of a whole brick shall be used; and wherever practicable, whole brick shall be used and laid as headers.

**c. Joints.** All joints shall be filled with mortar at every course. Exterior faces shall be laid up in advance of backing. Exterior faces shall be plastered or parged with a coat of mortar not less than 3/8 inch (9 mm) thick before the backing is laid up. Prior to parging, all joints on the back of face courses shall be cut flush. Unless otherwise noted, joints shall be not less than 1/4 inch (6 mm) nor more than 1/2 inch (12 mm) wide and the selected joint width shall be maintained uniform throughout the work.

**d. Pointing.** Face joints shall be neatly struck, using the weather-struck joint. All joints shall be finished properly as the laying of the brick progresses. When nails or line pins are used, the holes shall be immediately plugged with mortar and pointed when the nail or pin is removed.

**e. Cleaning.** Upon completion of the work all exterior surfaces shall be thoroughly cleaned by scrubbing and washing with water. If necessary to produce satisfactory results, cleaning shall be done with a 5% solution of muriatic acid which shall then be rinsed off with liberal quantities of water.

**f. Curing and cold weather protection.** The brick masonry shall be protected and kept moist for at least 48 hours after laying the brick. Brick masonry work or pointing shall not be done when there is frost on the brick or when the air temperature is below 50°F (10°C) unless the Contractor has, on the project ready to use, suitable covering and artificial heating devices necessary to keep the atmosphere surrounding the masonry at a temperature of not less than 60°F (16°C) for the duration of the curing period.

**751-3.3 Concrete structures.** Concrete structures which are to be cast-in-place within the project boundaries shall be built on prepared foundations, conforming to the dimensions and shape indicated on the plans. The construction shall conform to the requirements specified in Item P-610. Any reinforcement required shall be placed as indicated on the plans and shall be approved by the RPR before the concrete is placed.

All invert channels shall be constructed and shaped accurately to be smooth, uniform, and cause minimum resistance to flowing water. The interior bottom shall be sloped to the outlet.

**751-3.4 Precast concrete structures.** Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another RPR approved third party certification program.

Precast concrete structures shall conform to ASTM C478. Precast concrete structures shall be constructed on prepared or previously placed slab foundations conforming to the dimensions and locations shown on the plans. All precast concrete sections necessary to build a completed structure shall be furnished. The different sections shall fit together readily. Joints between precast concrete risers and tops shall be full-bedded in cement mortar and shall: (1) be smoothed to a uniform surface on both interior and exterior of the structure or (2) utilize a rubber gasket per ASTM C443. The top of the upper precast concrete section shall be suitably formed and dimensioned to receive the metal frame and cover or grate, or other cap, as required. Provision shall be made for any connections for lateral pipe, including drops and leads that may be installed in the structure. The flow lines shall be smooth, uniform, and cause minimum resistance to flow. The metal or metal encapsulated steps that are embedded or built into the side walls shall be aligned and placed in accordance to ASTM C478. When a metal ladder replaces the steps, it shall be securely fastened into position.

**751-3.5 Corrugated metal structures.** Corrugated metal structures shall be prefabricated. All standard or special fittings shall be furnished to provide pipe connections or branches with the

correct dimensions and of sufficient length to accommodate connecting bands. The fittings shall be welded in place to the metal structures. The top of the metal structure shall be designed so that either a concrete slab or metal collar may be attached to allow the fastening of a standard metal frame and grate or cover. Steps or ladders shall be furnished as shown on the plans. Corrugated metal structures shall be constructed on prepared foundations, conforming to the dimensions and locations as shown on the plans. When indicated, the structures shall be placed on a reinforced concrete base.

**751-3.6 Inlet and outlet pipes.** Inlet and outlet pipes shall extend through the walls of the structures a sufficient distance beyond the outside surface to allow for connections. They shall be cut off flush with the wall on the inside surface of the structure, unless otherwise directed. For concrete or brick structures, mortar shall be placed around these pipes to form a tight, neat connection.

**751-3.7 Placement and treatment of castings, frames, and fittings.** All castings, frames, and fittings shall be placed in the positions indicated on the plans or as directed by the RPR, and shall be set true to line and elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.

When frames or fittings are placed on previously constructed masonry, the bearing surface of the masonry shall be brought true to line and grade and shall present an even bearing surface so the entire face or back of the unit will come in contact with the masonry. The unit shall be set in mortar beds and anchored to the masonry as indicated on the plans or as directed by the RPR. All units shall set firm and secure.

After the frames or fittings have been set in final position, the concrete or mortar shall be allowed to harden for seven (7) days before the grates or covers are placed and fastened down.

**751-3.8 Installation of steps.** The steps shall be installed as indicated on the plans or as directed by the RPR. When the steps are to be set in concrete, they shall be placed and secured in position before the concrete is placed. When the steps are installed in brick masonry, they shall be placed as the masonry is being built. The steps shall not be disturbed or used until the concrete or mortar has hardened for at least seven (7) days. After seven (7) days, the steps shall be cleaned and painted, unless they have been galvanized.

When steps are required with precast concrete structures they shall meet the requirements of ASTM C478. The steps shall be cast into the side of the sections at the time the sections are manufactured or set in place after the structure is erected by drilling holes in the concrete and cementing the steps in place.

When steps are required with corrugated metal structures, they shall be welded into aligned position at a vertical spacing of 12 inches (300 mm).

Instead of steps, prefabricated ladders may be installed. For brick or concrete structures, the ladder shall be held in place by grouting the supports in drilled holes. For metal structures, the ladder shall be secured by welding the top support to the structure and grouting the bottom support into drilled holes in the foundation or as directed by the RPR.

**751-3.9 Backfilling.**

a. After a structure has been completed, the area around it shall be backfilled with approved material, in horizontal layers not to exceed 8 inches (200 mm) in loose depth, and compacted to the density required in Item P-152. Each layer shall be deposited evenly around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the plans or as directed by the RPR.

b. Backfill shall not be placed against any structure until approved by the RPR. For concrete structures, approval shall not be given until the concrete has been in place seven (7) days, or until tests establish that the concrete has attained sufficient strength to withstand any pressure created by the backfill and placing methods.

c. Backfill shall not be measured for direct payment. Performance of this work shall be considered an obligation of the Contractor covered under the contract unit price for the structure involved.

**751-3.10 Cleaning and restoration of site.** After the backfill is completed, the Contractor shall dispose of all surplus material, dirt, and rubbish from the site. Surplus dirt may be deposited in embankments, shoulders, or as approved by the RPR. The Contractor shall restore all disturbed areas to their original condition. The Contractor shall remove all tools and equipment, leaving the entire site free, clear, and in good condition.

### METHOD OF MEASUREMENT

**751-4.1** Manholes, catch basins, inlets, and inspection holes shall be measured by the unit.

### BASIS OF PAYMENT

**751-5.1** The accepted quantities of manholes, catch basins, inlets, and inspection holes will be paid for at the contract unit price per each in place when completed. This price shall be full compensation for furnishing all materials and for all preparation, excavation, backfilling and placing of the materials; furnishing and installation of such specials and connections to pipes and other structures as may be required to complete the item as shown on the plans; and for all labor equipment, tools and incidentals necessary to complete the structure.

Payment will be made under:

Item D-751-5.1 Manholes - per each

Item D-751-5.2 Catch Basins - per each

~~Item D-751-5.3 Inlets - per each~~

~~Item D-751-5.4 Inspection Holes - per each~~

### REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A27     Standard Specification for Steel Castings, Carbon, for General Application

ASTM A47     Standard Specification for Ferritic Malleable Iron Castings

ASTM A48     Standard Specification for Gray Iron Castings

- ASTM A123    Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- ASTM A283    Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
- ASTM A536    Standard Specification for Ductile Iron Castings
- ASTM A897    Standard Specification for Austempered Ductile Iron Castings
- ASTM C32     Standard Specification for Sewer and Manhole Brick (Made from Clay or Shale)
- ASTM C144    Standard Specification for Aggregate for Masonry Mortar
- ASTM C150    Standard Specification for Portland Cement
- ASTM C443    Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
- ASTM C478    Standard Specification for Precast Reinforced Concrete Manhole Sections
- ASTM C913    Standard Specification for Precast Concrete Water and Wastewater Structures.
- American Association of State Highway and Transportation Officials (AASHTO)
- AASHTO M36 Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains

**END OF ITEM D-751**

## ITEM D-752

### CONCRETE CULVERTS, HEADWALLS, AND MISCELLANEOUS DRAINAGE STRUCTURES

#### DESCRIPTION

**752-1.1** This item shall consist of **reinforced** concrete culverts, headwalls, and miscellaneous drainage structures constructed in accordance with these specifications, at the specified locations and conforming to the lines, grades, and dimensions shown on the plans or required by the RPR.

#### MATERIALS

**752-2.1 Concrete. Reinforced** concrete shall meet the requirements of Item P-610.

#### CONSTRUCTION METHODS

##### **752-3.1 Unclassified excavation.**

**a.** Trenches and foundation pits for structures or structure footings shall be excavated to the lines and grades and elevations shown on the plans. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or structure footings shown. The elevations of the bottoms of footings, as shown on the plans, shall be considered as approximate only; and the RPR may approve, in writing, changes in dimensions or elevations of footings necessary to secure a satisfactory foundation.

**b.** Boulders, logs, or any other objectionable material encountered in excavation shall be removed. All rock or other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped, or serrated, as directed by the RPR. All seams or crevices shall be cleaned out and grouted. All loose and disintegrated rock and thin strata shall be removed. When concrete will rest on a surface other than rock, the bottom of the excavation shall not be disturbed and excavation to final grade shall not be made until immediately before the concrete or reinforcing steel is placed.

**c.** The Contractor shall do all bracing, sheathing, or shoring necessary to perform and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheathing, or shoring shall be included in the unit price bid for excavation.

**d.** All bracing, sheathing, or shoring shall be removed by the Contractor after the completion of the structure. Removal shall not disturb or damage the finished concrete. The cost of removal shall be included in the unit price bid for excavation.

**e.** After each excavation is completed, the Contractor shall notify the RPR. No concrete or reinforcing steel shall be placed until the RPR has approved the depth of the excavation and the character of the foundation material.

##### **752-3.2 Backfilling.**

**a.** After a structure has been completed, backfilling with approved material shall be accomplished by applying the fill in horizontal layers not to exceed 8 inches (200 mm) in loose depth, and compacted. The field density of the compacted material shall be at least 90% of the maximum density for cohesive soils and 95% of the maximum density for noncohesive soils. The maximum density shall be determined in accordance with ASTM D698. The field density shall be determined in accordance with ASTM D1556.

**b.** No backfilling shall be placed against any structure until approved by the RPR. For concrete, approval shall not be given until the concrete has been in place seven (7) days, or until tests establish that the concrete has attained sufficient strength to withstand any pressure created by the backfill or the placement methods.

**c.** Fill placed around concrete culverts shall be deposited on each side at the same time and to approximately the same elevation. All slopes bounding or within the areas to be backfilled shall be stepped or serrated to prevent wedge action against the structure.

**d.** Backfill will not be measured for direct payment. Performance of this work shall be considered as a subsidiary obligation of the Contractor, covered under the contract unit price for “unclassified excavation for structures.”

**752-3.3 Weep holes.** Weep holes shall be constructed as shown on the plans.

**752-3.4 Cleaning and restoration of site.** After the backfill is completed, the Contractor shall dispose of all surplus material, dirt, and rubbish from the site. Surplus dirt may be deposited in embankment, shoulders, or as approved by the RPR. The Contractor shall restore all disturbed areas to their original condition. The Contractor shall remove all tools and equipment, leaving the entire site free, clear, and in good condition.

#### **METHOD OF MEASUREMENT**

**752-4.1** The quantity of unclassified excavation for structures shall be the number of cubic yards (cubic meters), measured in original position, of material excavated in accordance with the plans, or as approved by the RPR; but in no case shall any yardage be included in the measurement for payment which is outside of a volume bounded by vertical planes 18 inches (0.5 m) outside of and parallel to the neat lines of the footings.

**752-4.2** Concrete shall be measured by the number of cubic yards (cubic meters) of concrete, complete in place and accepted. In computing the yardage of concrete for payment, the dimensions used shall be those shown on the plans or approved by the RPR. No measurements or other allowances shall be made for forms, false work, cofferdams, pumping, bracing, expansion joints, or finishing of the concrete. No deductions in yardage shall be made for the volumes of reinforcing steel or embedded items.

**752-4.3** The quantity of reinforcing steel shall be the calculated theoretical number of pounds (lb) placed as shown on the plans, complete in place and accepted. The unit weight used for deformed bars shall be the weight of plain square or round bars, as the case may be, of equal nominal size.

#### **BASIS OF PAYMENT**

~~**752-5.1** Payment will be made at the contract unit price per cubic yard (cubic meter) for unclassified excavation for structures.~~

~~**752-5.2** Payment will be made at the contract unit price per cubic yard (cubic meter) for concrete for the structures.~~

~~**752-5.3** Payment will be made at the contract unit price per pound (lb) for reinforcing steel. These prices shall be full compensation for furnishing all materials and for all preparation, excavation, and placing the materials, and for all labor, equipment, tools, and incidentals necessary to complete the structure.~~

**Payment will be lump sum for complete installation of headwall or MES including excavation, embankment, labor, equipment, tools and incidentals.**

Payment will be made under:

Item D-752-5.1 ~~Unclassified Excavation for Structures – per cubic yard (cubic meter)~~

**Headwall – per each**

Item D-752-5.2 ~~Structural Concrete – per cubic yard (cubic meter)~~

**MES – per each**

Item D-752-5.3 Reinforcing Steel - per pound (km)

### **REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D698    Standard Test Methods for Laboratory Compaction Characteristics of Soil Using  
Standard Effort (12,400 ft-lb/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))

ASTM D1556   Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone  
Method

**END OF ITEM D-752**



## ITEM D-754

### CONCRETE GUTTERS, DITCHES, AND FLUMES

#### DESCRIPTION

**754-1.1** This item shall consist of Portland cement concrete gutters, ditches, and flumes constructed in accordance with these specifications at the specified locations in accordance with the dimensions, lines, and grades as shown on the plans.

#### MATERIALS

**754-2.1 Concrete.** Plain and reinforced concrete shall meet the requirements of Item P-610.

**754-2.2 Joints.** Joint filler materials and premolded joint material shall conform to Item P-605.

#### CONSTRUCTION METHODS

**754-3.1 Preparing subgrade.** Excavation shall be made to the required width and depth, and the subgrade upon which the item is to be built shall be compacted to a firm uniform grade. All soft and unsuitable material shall be removed and replaced with suitable approved material. When required, a layer of approved granular material, compacted to the thickness indicated on the plans, shall be placed to form a subbase. The underlying course shall be checked and accepted by the RPR before placing and spreading operations are started.

**754-3.2 Placing.** The forms and the mixing, placing, finishing, and curing of concrete shall conform to the requirements of Item P-610 and the following requirements.

The concrete shall be tamped until it is consolidated and mortar covers the top surface. The surface of the concrete shall be floated smooth and the edges rounded to the radii shown on the plans. Before the concrete is given the final finishing, the surface shall be tested with a 12-foot (3.7-m) straightedge, and any irregularities of more than 1/4 inch (6 mm) in 12-foot (3.7-m) shall be eliminated.

The concrete shall be placed with dummy-grooved joints not to exceed 25 feet (7.5 m) apart and no section shall be less than 4 feet (1.2 m) long.

Expansion joints of the type called for in the plans shall be constructed to replace dummy groove joints at a spacing of approximately 100 feet (30 m). When the gutter is placed next to concrete pavement, expansion joints in the gutter shall be located opposite expansion joints in the pavement. When a gutter abuts a pavement or other structure, an expansion joint shall be placed between the gutter and the other structure.

Forms shall not be removed within 24 hours after the concrete has been placed. Minor defects shall be repaired with mortar containing one (1) part cement and two (2) parts fine aggregate. Depositing, compacting, and finishing the item shall be conducted to build a satisfactory structure. If any section of concrete is found to be porous, or is otherwise defective, it shall be removed and replaced by the Contractor without additional compensation.

**754-3.3 Backfilling.** After the concrete has set sufficiently, the spaces adjacent to the structure shall be refilled to the required elevation with material specified on the plans and compacted by mechanical equipment to at least 90% of the maximum density as determined by ASTM D698. The in-place density shall be determined in accordance with ASTM D1556.

**754-3.4 Cleaning and restoration of site.** After the backfill is completed, the Contractor shall dispose of all surplus material, dirt, and rubbish from the site. Surplus dirt may be deposited in embankments, shoulders, or as ordered by the RPR. The Contractor shall restore all disturbed areas to their original condition. The Contractor shall remove all tools and equipment, leaving the entire site free, clear and in good condition.

Performance of the work described in this section shall be considered as a subsidiary obligation of the Contractor, covered under the contract unit price for the structure.

#### **METHOD OF MEASUREMENT**

**754-4.1** Concrete shall be measured by the cubic yard (cubic meter) in accordance with the dimensions shown on the plans or ordered by the RPR. No deductions shall be made for the volume occupied by reinforcing steel, anchors, conduits, weep holes, or piling. **754-4.1 payment is incidental to excavation and included in pay item P-152-4.2**

**754-4.2** Reinforcing steel shall be measured by the pound (kg), based on the theoretical number of pounds (kg) complete in place as shown on the plans or placed as ordered by the RPR.

#### **BASIS OF PAYMENT**

**754-5.1** The accepted quantities of structural concrete will be paid for at the contract unit price per cubic yard (cubic meter) complete in place.

**754-5.2** The accepted quantities of reinforcing steel will be paid for at the contract price per pound (kg) complete in place. No allowance shall be made for clips, wire, or other material used for fastening reinforcement in place. **754-4.1 Paid under P-152-4.2**

Payment will be made under:

Item D-754-5.1 Structural Concrete - per cubic yard (cubic meter)

Item D-754-5.2 Reinforcing Steel - per pound (kg)

#### **REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lb/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))

ASTM D1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method

**END OF ITEM D-754**

## ITEM T-901

### SEEDING

#### DESCRIPTION

**901-1.1** This item shall consist of soil preparation, seeding **by fertilizing** the areas shown on the plans or as directed by the RPR in accordance with these specifications.

#### MATERIALS

**901-2.1 Seed.** The species and application rates of grass, legume, and cover-crop seed furnished shall be those stipulated herein. Seed shall conform to the requirements of Federal Specification JJJ-S-181, Federal Specification, Seeds, Agricultural.

Seed shall be furnished separately or in mixtures in standard containers labeled in conformance with the Agricultural Marketing Service (AMS) Seed Act and applicable state seed laws with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the RPR duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within six (6) months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed, and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in case of a mixture, the proportions of each kind of seed. Wet, moldy, or otherwise damaged seed will be rejected.

Seeds shall be applied as follows:

#### Seed Properties and Rate of Application

Seed	Minimum Seed Purity (Percent)	Minimum Germination (Percent)	Rate of Application lb/acre (or lb/1,000 S.F.)
*	*	*	*
*	*	*	*

Seeding shall be performed during the period between **8AM** and **4PM** inclusive, unless otherwise approved by the RPR.

**901-2.2 Lime.** Not required.

**901-2.3 Fertilizer.** Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash. They shall be applied at the rate and to the depth specified, and shall meet the requirements of applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers. The fertilizers may be supplied in one of the following forms:

**a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;**

**~~b. A finely ground fertilizer soluble in water, suitable for application by power sprayers; or~~**

**~~c. A granular or pellet form suitable for application by blower equipment.~~**

**Fertilizers shall be commercial fertilizer and shall be spread as recommended for area.**

**901-2.4 Soil for repairs.** The soil for fill and topsoiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the RPR before being placed.

## **CONSTRUCTION METHODS**

**901-3.1 Advance preparation and cleanup.** After grading of areas has been completed and before applying fertilizer and ground limestone, areas to be seeded shall be raked or otherwise cleared of stones larger than 2 inches (50 mm) in any diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after the completion of grading and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be seeded shall be considered a satisfactory seedbed without additional treatment if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches (125 mm) as a result of grading operations and, if immediately prior to seeding, the top 3 inches (75 mm) of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and if shaped to the required grade.

When the area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, any grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches (125 mm). Clods shall be broken and the top 3 inches (75 mm) of soil shall be worked into a satisfactory seedbed by discing, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

### **901-3.2 Dry application method.**

**a. Liming.** Not required.

**b. Fertilizing.** Following advance preparations and cleanup fertilizer shall be uniformly spread at the rate that will provide not less than the minimum quantity stated in paragraph 901-2.3.

**c. Seeding.** Grass seed shall be sown at the rate specified in paragraph 901-2.1 immediately after fertilizing. The fertilizer and seed shall be raked within the depth range stated in the special provisions. Seeds of legumes, either alone or in mixtures, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods required for grass and legume seeding.

**d. Rolling.** After the seed has been properly covered, the seedbed shall be immediately compacted by means of an approved lawn roller, weighing 40 to 65 pounds per foot (60 to 97 kg per meter) of width for clay soil (or any soil having a tendency to pack), and weighing 150 to 200 pounds per foot (223 to 298 kg per meter) of width for sandy or light soils.

### **901-3.3 Wet application method.**

**a. General.** The Contractor may elect to apply seed and fertilizer (and lime, if required) by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using the methods and equipment described herein. The rates of application shall be as specified in the special provisions.

**b. Spraying equipment.** The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons (190 liters) over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The unit shall also be equipped with a pressure pump capable of delivering 100 gallons (380 liters) per minute at a pressure of 100 lb / sq inches (690 kPa). The pump shall be mounted in a line that will recirculate the mixture through the tank whenever it is not being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for 5/8 inch (16 mm) solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be an indicating pressure gauge connected and mounted immediately at the back of the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 to 100 feet (6 to 30 m). One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For case of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet (15 m) in length shall be provided to which the nozzles may be connected.

**c. Mixtures.** Lime, if required, shall be applied separately, in the quantity specified, prior to the fertilizing and seeding operations. Not more than 220 pounds (100 kg) of lime shall be added to and mixed with each 100 gallons (380 liters) of water. Seed and fertilizer shall be mixed together in the relative proportions specified, but not more than a total of 220 pounds (100 kg) of these combined solids shall be added to and mixed with each 100 gallons (380 liters) of water.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. The Contractor shall identify to the RPR all sources of water at least two (2) weeks prior to use. The RPR may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the RPR following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within two (2) hours from the time they were mixed or they shall be wasted and disposed of at approved locations.

**d. Spraying.** Lime, if required, shall be sprayed only upon previously prepared seedbeds. After the applied lime mixture has dried, the lime shall be worked into the top 3 inches (75 mm), after which the seedbed shall again be properly graded and dressed to a smooth finish.

Mixtures of seed and fertilizer shall only be sprayed upon previously prepared seedbeds on which the lime, if required, shall already have been worked in. The mixtures shall be applied by means of a high-pressure spray that shall always be directed upward into the air so that the mixtures will fall to the ground like rain in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner as might produce erosion or runoff.

Particular care shall be exercised to ensure that the application is made uniformly and at the prescribed rate and to guard against misses and overlapped areas. Proper predetermined quantities of the mixture in accordance with specifications shall be used to cover specified sections of known area.

Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or pans over the area at intervals and observing the quantity of material deposited thereon.

On surfaces that are to be mulched as indicated by the plans or designated by the RPR, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

**901-3.4 Maintenance of seeded areas.** The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the RPR. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work. When either the dry or wet application method outlined above is used for work done out of season, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the RPR. A grass stand shall be considered adequate when bare spots are one square foot (0.01 sq m) or less, randomly dispersed, and do not exceed 3% of the area seeded.

## **METHOD OF MEASUREMENT**

**901-4.1** The quantity of seeding to be paid for shall be the number of units **per square yards** measured on the ground surface, completed and accepted.

## **BASIS OF PAYMENT**

**901-5.1** Payment shall be made at the contract unit price **per square yards** or fraction thereof, which price and payment shall be full compensation for furnishing and placing all material and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

Payment will be made under:

Item 901-5.1    Seeding - **per square yards**

#### **REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C602    Standard Specification for Agricultural Liming Materials

Federal Specifications (FED SPEC)

FED SPEC    JJJ-S-181, Federal Specification, Seeds, Agricultural

Advisory Circulars (AC)

AC 150/5200-33    Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

**END OF ITEM T-901**