

CONTRACT DOCUMENTS AND SPECIFICATIONS
for
CRACK SEAL & RE-MARK AIRFIELD

JACKSON COUNTY AIRPORT
MARCH 2016

WKD #20160013.00.AT

Addendum #1
April 7, 2016

Prepared for

JACKSON COUNTY
AIRPORT TERMINAL BUILDING
500 SKY HARBOR WAY
JEFFERSON, GA 30549

Plans & Specifications
Prepared by
W.K. Dickson & Co., Inc.
2120 Powers Ferry Road, Suite 100
Atlanta, Georgia 30339
Phone: (770) 955-5574

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DIVISION I

CONTRACT REQUIREMENTS

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NOTICE TO BIDDERS

Sealed proposals will be received by the Jackson County in the County Administration Building located at 67 Athens Street, Jefferson, GA 30549 up to **10:00 am, Friday, April 22, 2016** and immediately thereafter publicly opened and read for the furnishing of labor, material and equipment for the Crack Seal & Re-Mark Airfield.

Bids must be submitted on the complete project and must be enclosed in a sealed envelope, addressed to Jackson County, Attn: Len Bernat, Purchasing Manager, 67 Athens Street, Jefferson, GA 30549. Outside of the envelope must be marked "Bid for Crack Seal & Re-Mark Airfield." Envelope must also bear, on the outside, the name of the bidder, bidder's address, and bidder's license number. All bids must be made on blank forms provided and included in the bound document or as provided by Addendum prior to bid.

The work shall consist of the furnishing of labor, material, and equipment for the Crack Seal & Re-Mark Airfield.

Each proposal shall be accompanied by a cash deposit or certified check, drawn on some bank or trust company insured by the Federal Deposit Insurance Corporation, in an amount equal to not less than five percent of the proposal. In lieu thereof, the bidder may offer a bid bond of five percent of the bid prepared on the Bid Bond form contained within the Contract Documents or a Surety Company's Standard Bid Bond form, duly executed by the Bidder as principal and executed by a surety company licensed under the laws of Georgia to execute such bonds and listed in the latest issue of U. S. Treasury Circular 570, conditioned that the surety will, upon demand, forthwith make payment to the obligee upon said bond if the bidder fails to execute the contract in accordance with the bid bond. Said deposit shall be retained by the Owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten days after the award or to give satisfactory surety as required by law.

Plans, Specifications and Contract Documents may be examined at the following locations:

- W.K. Dickson & Co., Inc., 2120 Powers Ferry Road, Suite 100, Atlanta, GA 30339
phone: (770) 955-5574.
- Jackson County Airport, Terminal Building, 500 Sky Harbor Way, Jefferson, GA 30549
phone: (706) 367-1493
- Jackson County Purchasing Dept., Admin. Bldg., 67 Athens Street, Jefferson, GA 30549
phone: (706) 367-6309

Plans, Specifications, and Contract Documents are available for purchase online only by going to Plan Room at www.wkdickson.com. Please note that only registered plan holders may bid.

The State Department of Transportation and the United States Government have agreed to reimburse the Owner for portions of the project costs. The Owner will not accept or consider proposals from any contractor whose name, at the time of opening of bids or award, appears on the then-current list of ineligible contractors published by the Comptroller General of the United States under Section 5.6 (b) of the Regulations of the Secretary of Labor (29) CFR nor a proposal from any firm, corporation, partnership, or proprietorship in which an ineligible contractor who, at the time of the opening of bids or the award, is removed from the Georgia Department of Transportation's list of prequalified contractors.

By submitting a bid the Contractor certifies that he has under his direct control, or at his disposal, the men, equipment, and materials required to execute this work as specified. Lack of such control or availability of men, equipment, or materials shall constitute failure to properly execute the Contract. Performance and Labor and Material Payment Bonds will be required for 100% of the Contract price, with a surety or sureties legally authorized to do business in the State of Georgia.

A bid may be withdrawn only as provided by the applicable Georgia General Statutes. If a bid is withdrawn within 120 days of the bid opening, the Bid Guaranty shall be forfeited; provided that, if the request to withdraw is made pursuant to G.S. 143-129.1 not later than 72 hours after the opening of bids and if the withdrawal is allowed, the owner may return the Bid Guaranty.

Proposals submitted without the prescribed information may be rejected.

All Bidders should be aware that the date, time, and location for Proposal Submittal and Opening may be modified by Addendum.

The project is conditioned upon the receipt of federal funding under provisions of the Airport and Airways Safety & Capacity Expansion Act of 1987. Certain mandatory federal requirements apply to this solicitation and will be made part of any contract awarded.

1. Buy American Preference (Title 49 United States Code, Chapter 501);
2. Foreign Trade Restriction (49 CFR Part 30);
3. Disadvantaged Business Enterprise (49 CFR Part 26);
4. Davis-Bacon Act (29 CFR Part 5);
5. Equal Employment Opportunity (Executive Order 11246, DOL Regulation 41 CFR Part 60);
6. Goals for Minority and Female Participation (41 CFR Part 60-4.2);
7. Certification of Non-Segregated Facilities (41 CFR Part 60-1.8);
8. Debarment, Suspension, Ineligibility and Voluntary Exclusion (49 CFR Part 29)
9. Bid Guaranty of 5% (49 CFR Part 18.36(h)(1))
10. Performance Bond of 100% (49 CFR Part 18.36(h)(2))
11. Payment Bond of 100% (49 CFR Part 18.36(h)(3))

The requirements of 49 CFR Part 26, Regulations of the U.S. Department of Transportation, apply to this contract. It is the policy of the Jackson County to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. All firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this bid specification. These requirements apply to all bidders/offerors, including those who qualify as DBE. **A DBE contract goal of 21.2% has been established for this contract as of April 6, 2016.** The bidder/offeror shall make good faith efforts, as defined in Appendix A, 49 CFR Part 26 (Attachment 1), to meet the contract goal by utilizing DBEs in the performance of this contract.

The apparent successful bidder will be required to submit in the "Proposal" section of his bid the information concerning the DBE that will participate in this contract. This information will include: (1) the names, addresses and telephone numbers of Georgia licensed DBE firms that will participate in the contract; (2) a description of the work that each DBE firm will perform; (3) the dollar amount of the participation of each DBE firm participating; (4) written documentation of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet the

contract goal; and (5) written confirmation from the DBE that it is participating in the contract as provided in the commitment made under (4).

If the bidder fails to achieve the contract goal stated herein, he will be required to provide documentation demonstrating that he made a good faith effort. The bidder's documentation shall be submitted in accordance with the provisions outlined in the Proposal.

No pre-bid meeting is scheduled for this project.

Address questions regarding this notice to:

Michael Joseph, P.E., Project Manager
W. K. Dickson & Co., Inc.
2120 Powers Ferry Road, Ste. 100
Atlanta, GA 30339
(770) 955-5574
mjoseph@wkdickson.com

The Owner reserves the right to reject any or all bids and to waive informalities & technicalities.

Len Bernat, Purchasing Manager
Jackson County Purchasing Department
67 Athens Street
Jefferson, GA 30549

END OF NOTICE TO BIDDERS

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INSTRUCTIONS TO BIDDERS

The terms "Proposal" or "Bid" shall refer to the written offer of the bidder (or "proposer") (when submitted on the approved bid/proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications. The terms "proposal" and "bid" may be used interchangeably throughout the contract documents. The bid, to be considered, must be submitted in accordance with the complete set of documents including the plans, and bidders are specifically directed to review the bid forms, these Instructions to Bidders, and the General Provisions.

1. PROPOSALS

Proposals must be made in strict conformity with the "Proposal" provided and these Instructions to Bidders. **The Proposal should be submitted in a sealed envelope on or before the specified bid date.** The Proposal should not be detached from the documents. All blank spaces for bids and alternatives must be properly filled in (written in ink or typed). Unit Prices shall be stated both in words and numerals. The total prices for a bid item shall also be stated both in words and numerals. The total amount bid shall be stated both in words and numerals in the proper place in the proposals form. The complete form shall be without alterations or erasures. In case of conflict between words and numerals, the words, unless obviously incorrect, shall govern.

The bidder shall complete the form of proposal as follows:

- a. If the documents are executed by a sole proprietor, that fact shall be evidenced by the word "Owner" appearing after the name of the person executing them.
- b. If the documents are executed by a partnership, that fact shall be evidenced by the word "Partner" appearing after the name of the partner executing them.
- c. If the documents are executed by a corporation, they shall be executed in the name of the corporation by either the President or the Vice President and attested by the Secretary or Assistant Secretary and its seal shall be impressed on each copy of the documents.
- d. All signatures must be in ink and properly witnessed.

Proposals shall be addressed and delivered on or before **10:00 am, Friday, April 22, 2016.**

Bids shall be addressed and delivered to the Jackson County Airport Authority, ATTN: Len Bernat, Purchasing Manager, 67 Athens Street, Jefferson, GA 30549 and enclosed in a sealed envelope, as required by the General Provisions Section 20, PROPOSAL REQUIREMENTS AND CONDITIONS.

It shall be the responsibility of the bidder to deliver his bid package to the proper official at the appointed time and place prior to the announced time for the opening of bids. Later delivery of the bid package for any reason shall disqualify the bid. A bidder may withdraw a bid provided that the bidder's request for withdrawal is received by the owner in writing or by telegram before the time specified for the opening of bids.

Modifications to bids will be accepted only if such modifications are delivered in writing to the Owner prior to the time for opening of bids. Should the bidder find discrepancies in or omissions from the drawings or documents, or should he be in doubt as to the meaning of anything in the documents, he shall at once notify the Engineer, in writing, who, when

necessary, will send a written instruction to all bidders through the issuance of an addendum to the contract documents. Neither, the Owner, nor the Engineer nor their representatives will be responsible for any oral instruction or interpretation. If plans and specifications are found to disagree after the Contract is awarded, the Engineer shall be the judge as to what was intended.

2. PROPOSAL GUARANTY

Each bid shall be accompanied by a cash deposit, or a certified check drawn on a bank or trust company insured by the FDIC, or a bid bond in an amount not less than **five percent (5%)** of the bid, said deposit to be retained by the Owner as liquidated damages should the successful bidder fail to properly execute the Contract within ten (10) days after the award and to give satisfactory surety as required by law.

3. QUALIFICATIONS OF BIDDERS

To demonstrate qualifications to perform the work, the Successful bidder must submit within seven (7) days of the opening of bids evidence which may be required by the Owner, such as, but not limited to, financial data and previous experience. Each bid must contain evidence of the bidder's qualification to do business in the State where the project is located. Conditional or qualified bids will not be accepted. In addition, pertinent provisions of item 7, of this section, determine additional requirements for qualifications of bidders.

By submission of a bid the bidder agrees, that if awarded a contract, to perform the work and with his own organization, work equivalent to at least **twenty-five percent (25%)** of the total amount of the work to be performed under the Contract. If during the progress of the work hereunder, The Contractor requests an adjustment of such percentage and the Engineer determines that it would be to the Owner's advantage, the percentage of the work required to be performed by the Contractor's organization may be adjusted; PROVIDED prior written approval of such adjustment is obtained from the Engineer.

All bidders must be properly licensed in the State of Georgia and must indicate their current license number on the outside of the sealed envelope containing their bid. Additional requirements for bid submission are specified in other items in this section.

4. EXAMINATION OF CONTRACT DOCUMENTATION AND SITE

Before submitting a bid, each bidder must:

- a. examine the bidding documents thoroughly;
- b. visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the work;
- c. familiarize himself of federal, state & local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the work;
- d. study & carefully correlate bidder's observations with Drawings & Specifications;
- e. notify the Engineer in writing of any conflicts, errors or discrepancies.

Before submitting a bid, the bidder may, at his own expense and assuming all risks, make any additional investigations and/or tests as the bidder may deem necessary for him to prepare his bid for performance of the work in accordance with the time, price and other

terms and conditions of the Contract Documents. On request in advance, the Owner will provide each bidder access to the site to conduct such explorations and tests as each bidder deems necessary for submission of a bid. The bidder shall upon completion of such explorations fill and compact as necessary all holes, and clean and restore the site to its former condition.

The Submission of a bid will constitute an incontrovertible representation by the bidder that he has complied with every requirement to bid the project and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the work.

5. ADDENDA

All questions concerning the meaning or intent of the Contract Documents are to be directed to the Engineer. During the bidding process, such inquiries must be made in writing. Interpretations or clarifications considered necessary by the Engineer in response to such questions will be made through the issuance of addenda to the Contract Documents. Any addenda to the Contract Documents issued during the time of bidding will be considered a part of the Contract Documents and will become a part of the Contract. Receipt of addenda shall be acknowledged by the bidder on the bid form.

6. 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 given only as a basis for comparison of proposals and 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 estimated 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 plans & specifications. It is understood that the quantities may be increased or decreased without in any way invalidating the unit bid price.

7. BID CONDITIONS (DBE PROGRAM)

The following bid conditions apply to the bidders for this United States Department of Transportation (DOT) assisted contract. Submission of a bid/proposal by a prospective contractor shall constitute full acceptance of these bid conditions.

A. Definition. Disadvantaged Business Enterprises (DBE) as used in this Contract shall have the same meaning as defined in 49 CFR Part 26.

B. Policy. It is the policy of the (DOT) that DBE's as defined in 49 CFR Part 26 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds under this agreement. Consequently, the DBE requirements of 49 CFR Part 26 apply to this agreement.

C. DBE Obligation. The Contractor or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of

DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of the Contract or such other remedy, as the recipient deems appropriate.

D. Compliance. All bidders, potential contractors, and subcontractors for this DOT assisted contract are hereby notified that failure to carry out the DOT policy and the DBE obligation, as set forth above, shall constitute a breach of contract which may result termination of the Contractor such other remedy as deemed appropriate by the Owner and the FAA.

E. Subcontract Clause. Bidders and potential contractors hereby assure that they will include the above clauses in all subcontracts which offer further subcontracting opportunities.

F. Prompt Payment. The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than [fifteen (15)] days of receipt of each payment the prime contractor receives from the owner. The prime contractor agrees further to return retainage payments to each subcontractor within [fifteen (15)] days after the subcontractors work is completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of recipient. This clause applies to both DBE and non-DBE subcontractors.

G. Contract Award. Bidders are hereby advised that meeting DBE subcontract goals or making an acceptable good faith effort to meet such goals are conditions of being awarded this DOT assigned contract. The Civil Rights Division of the Federal Aviation Administration will make the final determination on whether an acceptable good faith effort was made. If the FAA determines that a good faith effort has not been made, then the bid will be considered non-responsive.

The Owner proposes to award the Contract to the lowest responsive and responsible bidder submitting a reasonable bid provided he has met the goals for DBE participation or, if failing to meet the goals, he has made an acceptable good faith effort to meet the established goals for DBE participation. Bidder is advised that the Owner reserves the right to reject any or all bids submitted.

H. DBE Participation Goals. The attainment of goals established for this Contract is to be measured as a percentage of the total dollar value of the Contract. The goals established for this Contract (based on historical and availability, references to be performed by DBE's) are as follows: **21.2%**

I. Available DBE's. Real-time information about firms doing business with the Department and firms that are certified through Georgia's Unified Certification Program is available in the Directory of Contractors. Only firms identified as DBE certified in this Directory can be utilized to meet the contract goals. The Directory can be accessed online by entering <http://www.dot.state.ga.us/DOINGBUSINESS/dbePrograms> in address bar of your web browser or by clicking on the link on the Department's homepage.

The listing of an individual firm in the Department's directory shall not be construed as an endorsement of the firm's capability to perform certain work.

J. Contractor's Required Submission. The Owner requires the submission of the information described in the Proposal section of the Contract Documents with the bid proposal. Certain other DBE information may also be required.

All bidders failing to meet the established contract goal(s) will also be required to submit information to assist the Owner in determining whether or not the Contractor made acceptable good faith efforts to meet the Contract goal(s). This information shall be submitted with the bid and shall consist of the forms provided in the Proposal section, backup documentation required by the forms in the Proposal section and other information the Bidder wishes to submit to document the good faith efforts made. This information will be reviewed by the Owner and subsequently forwarded by the Owner to the Civil Rights Division of the Federal Aviation Administration for review. **Failure to submit this information with the bid will result in the bid being considered non-responsive.**

Suggested guidance for use in determining if good faith efforts were made by Contractor is included in 49 CFR Part 26. The following factors will be used to determine if the bidder has made adequate good faith effort:

1. Whether the bidder attended any pre-bid meetings that were scheduled by the Department to inform DBE's of contracting and subcontracting opportunities.
2. Whether the bidder provided solicitations through all reasonable and available means (e.g. advertising in newspapers owned and targeted to the Disadvantaged) at least 10 calendar days prior to bid opening).
3. Whether the bidder provided written notice to all DBEs listed in the GDOT Directory, within the Divisions and surrounding Divisions where the project is located, that specialize in the areas of work (as noted in the DBE Directory) that the bidder will be subletting.
4. Whether the bidder followed up initial solicitations of interest by contacting DBE's to determine with certainty whether the DBE's were interested.
5. Whether the bidder selected portions of work to be performed by DBE's in order to increase the likelihood of meeting the contract goal(s). This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the bidder might otherwise perform these work items with its own forces.
6. Whether the bidder provided interested DBE's with adequate information about plans, specifications and requirements of the Contract.
7. 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. Any rejection should be noted in writing with a description as to why an agreement could not be reached.
8. Whether quotations were received from interested DBE firms but rejected as unacceptable without sound reasons why the quotations were considered

unacceptable. The fact that the DBE firms' quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered as sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy contract goals.

9. Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation.

10. Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance, and/or bonding to satisfy the work requirements in the bid proposal.

11. Any other evidence that the bidder submits which show that the bidder has made reasonable good faith efforts to meet the contract goal.

K. Contractor Assurances. The bidder hereby assures that he will meet one of the following, as appropriate:

- a. The DBE participation goals as established in Paragraph H above.
- b. The actual proposed DBE participation percentage shown by the bidder in the Proposal section.

Agreements between bidder/proposer and a DBE in which the DBE promises not to provide subcontracting quotations to other bidders/proposers are prohibited. The bidder shall make a good faith effort to replace a DBE subcontractor that is unable to perform successful with another DBE subcontractor. Substitution must be coordinated with and approved by the Owner.

The bidder shall establish and maintain records and submit regular reports, as required, which will identify and assess progress in achieving DBE subcontract goals and other DBE affirmative action efforts.

8. AWARD OF CONTRACT

Award of the Contract will be made to the lowest responsive and responsible bidder as soon as practicable.

The Owner reserves the right to reject any or all bids and to waive informalities and minor irregularities.

The Owner may require the apparent low bidder to prove himself to be a responsible bidder by requesting the bidder to provide financial statements, experience in completion of similar projects, the names of holders of trade licenses and similar information.

The Georgia Department of Transportation has agreed to reimburse the Owner for portions of the project costs. The Owner will not accept or consider proposals from any Contractor

whose name, at the time of opening of bids or award, appears on the current list of ineligible contactors published by the Comptroller General of the United States under Section 5.6 (b) of the Regulations of the Secretary of Labor (29 CFR Part 5), the state Department of Transportation list of ineligible Contractors nor a proposal from any firm, corporation, partnership or proprietorship in which an ineligible Contractor has a substantial interest.

9. CANCELLATION OF AWARD

The Owner reserves the right to cancel the award without liability to the bidder, except return of the bid guaranty, at any time before a contract has been fully executed by all parties and approved by the Owner. Award of this Contract is subject to the receipt of a grant from the FAA/GA Division of Aviation.

10. PERFORMANCE AND LABOR AND MATERIALS PAYMENT BONDS

The Contractor shall furnish Performance, Labor, and Materials Payment surety bonds in the form indicated in the Contract Documents executed by a surety company authorized to do business in the state. Each such bond shall be in an amount equal to one hundred percent (100%) of the Contract price. Separate surety bonds shall be provided for the faithful performance of the Contract, for the payment of all persons performing labor on the project, and for furnishing materials in connection therewith.

11. BIDS TO BE RETAINED

No bid shall be withdrawn within 120 days after the scheduled time for the receipt of bids pending the execution of a Contract between the Owner and the successful bidder. Should the successful bidder default and not execute a contract, the Contract may be offered to the next lowest and responsible bidder. In this event the low bidder's bid guaranty will be kept by the Owner as liquidated damages.

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**CONTRACTOR CONTRACTUAL REQUIREMENTS
AND
TITLE VI ASSURANCES**

IL RIGHTS ACT OF 1964, TITLE VI - CONTRACTOR CONTRACTUAL REQUIREMENTS

GENERAL CIVIL RIGHTS PROVISIONS

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

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

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

This provision obligates the tenant/concessionaire/lessee or its transferee for the period during which Federal assistance is extended to the airport through the Airport Improvement Program.

In cases where Federal assistance provides, or is in the form of personal property; real property or interest therein; structures or improvements thereon, this provision obligates the party or any transferee for the longer of the following periods:

(a) The period during which the property is used by the airport sponsor or any transferee for a purpose for which Federal assistance is extended, or for another purpose involving the provision of similar services or benefits; or

(b) The period during which the airport sponsor or any transferee retains ownership or possession of the property.

Title VI Solicitation Notice:

The (Name of Sponsor), in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

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

Compliance with Regulations: Contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts And Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

Non-discrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection

and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.

Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.

Information and Reports: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts And Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, contractor will so certify to sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:

- (a) withholding payments to the contractor under the contract until the contractor complies; and/or
- (b) cancelling, terminating, or suspending a contract, in whole or in part.

Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

DEEDS TRANSFERRING UNITED STATES PROPERTY

NOW, THEREFORE, the Federal Aviation Administration as authorized by law and upon the condition that the (Title of Sponsor) will accept title to the lands and maintain the project constructed thereon in accordance with (Name of Appropriate Legislative Authority), for the

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

(HABENDUM CLAUSE)

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

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

TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE ACTIVITY, FACILITY, OR PROGRAM

A. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree in the case of deeds and leases add “as a covenant running with the land” that:

1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a Federal Aviation Administration activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Nondiscrimination Acts and Regulations listed in the Pertinent List of Nondiscrimination Authorities (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Nondiscrimination covenants, (Title of Sponsor) will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.*

C. With respect to a deed, in the event of breach of any of the above Nondiscrimination covenants, the Owner will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the (Title of Sponsor) and its assigns.*

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

A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the List of discrimination Acts And Authorities.

B. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above nondiscrimination covenants, (Title of Sponsor) will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.

C. With respect to deeds, in the event of breach of any of the above nondiscrimination covenants, Owner will there upon revert to and vest in and become the absolute property of Owner and its assigns.

TITLE VI LIST OF PERTINENT NONDISCRIMINATION ACTS & AUTHORITIES

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

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

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

AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, SECTION 520 - GENERAL CIVIL RIGHTS PROVISIONS

The contractor assures that it will comply with pertinent statutes, Executive orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance. This provision obligates tenant/concessionaire/lessee or its transferee for the period during which Federal assistance is extended to the airport a program, except where Federal assistance is to provide, or is in the form of personal property or real property or interest therein or structures or improvements thereon. In these cases the provision obligates the party or any transferee for the longer of the following periods: (a) the period during which the property is used by the airport sponsor or any transferee for a purpose for which Federal assistance is extended, or for another purpose involving the provision of similar services or benefits or (b) the period during which the airport sponsor or any transferee retains ownership or possession of the property. In the case of contractors, this provision binds the contractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

DISADVANTAGED BUSINESS ENTERPRISES

The Owner's award of this contract is conditioned upon Bidder or Offeror satisfying the good faith effort requirements of 49 CFR §26.53. As a condition of bid responsiveness, the Bidder or Offeror must submit following information with their proposal on the forms provided herein:

- (1) The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the contract;
- (2) A description of the work that each DBE firm will perform;
- (3) The dollar amount of the participation of each DBE firm listed under (1)
- (4) Written statement from Bidder or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet the Owner's project goal;
- (5) If Bidder or Offeror cannot meet the advertised project DBE goal; evidence of good faith efforts undertaken by the Bidder or Offeror as described in appendix A to 49 CFR Part 26. The successful Bidder or Offeror must provide written confirmation of participation from each of the DBE firms the Bidder or Offeror lists in their commitment. This Bidder or Offeror must submit the DBE's written confirmation of participation with the proposal documents as a condition of bid responsiveness.

1. **Contract Assurance.** The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award & administration of DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the

recipient deems appropriate. The requirements of 49 CFR part 26 apply to this contract. It is the policy of the Owner to practice nondiscrimination based on race, color, sex or national origin in the award or performance of this contract. Owner encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

2. **Prompt Payment.** The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than seven days from the receipt of each payment the prime contractor receives from the recipient. The prime contractor agrees further to return retainage payments to each subcontractor within 7 days after the subcontractor's work is satisfactorily completed. The prime contractor agrees further to return retainage payments to each subcontractor within 7 days. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the recipient. This clause applies to both DBE and non-DBE subcontractors.

LOBBYING AND INFLUENCING FEDERAL EMPLOYEES

1. No Federal appropriated funds shall be paid, by or on behalf of the contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant and the amendment or modification of any Federal grant.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any Federal grant, the contractor shall complete and submit Standard Form-LLL, "Disclosure of Lobby Activities," in accordance with its instructions.

ACCESS TO RECORDS AND REPORTS

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

BREACH OF CONTRACT TERMS

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

Owner will provide Contractor written notice that describes the nature of the breach and corrective actions the Contractor must undertake in order to avoid termination of the contract.

Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner's notice will identify a specific date by which the Contractor must correct the breach. Owner may proceed with termination of the contract if the Contractor fails to correct the breach by deadline indicated in the Owner's notice.

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

RIGHTS TO INVENTIONS

Contracts or agreements that include the performance of experimental, developmental, or research work must provide for the rights of the Federal Government and the Owner in any resulting invention as established by 37 CFR part 401, Rights to Inventions Made by Non-profit Organizations and Small Business Firms under Government Grants, Contracts, and Cooperative Agreements. This contract incorporates by reference the patent and inventions rights as specified within in the 37 CFR §401.14. Contractor must include this requirement in all sub-tier contracts involving experimental, developmental or research work.

TRADE RESTRICTION CLAUSE

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror -

- a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (U.S.T.R.);
- b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the U.S.T.R; and
- c. has not entered into any subcontract for any product to be used on the Federal on the project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The Contractor must require subcontractors provide immediate written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to an Offeror or subcontractor:

- (1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R. or
- (2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such U.S.T.R. list or
- (3) who incorporates in the public works project any product of a foreign country on such U.S.T.R. list;

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

Offeror agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by U.S.T.R, unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, Federal Aviation Administration may direct through the Owner cancellation of contract or subcontract for default at no cost to the Owner or the FAA.

TERMINATION OF CONTRACT

The Owner may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to the owner all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work and as directed in the written notice.
5. Complete performance of the work not terminated by the notice.
6. Take action as directed by the owner to protect and preserve property and work related to this contract that Owner will take possession.

Owner agrees to pay Contractor for:

- a) completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;
- b) documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;
- c) reasonable and substantiated claims, costs and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
- d) reasonable and substantiated expenses to the contractor directly attributable to Owner's termination action

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this contract.

Termination for Default (Construction)

Section 80-09 of FAA Advisory Circular 150/5370-10 establishes conditions, rights and remedies associated with Owner termination of this contract due default of the Contractor.

Termination for Default (Equipment)

The Owner may, by written notice of default to the Contractor, terminate all or part of this Contract if the Contractor:

1. Fails to commence the Work under the Contract within the time specified in the Notice-to-Proceed;
2. Fails to make adequate progress as to endanger performance of this Contract in accordance with its terms;
3. Fails to make delivery of the equipment within the time specified in the Contract, including any Owner approved extensions;
4. Fails to comply with material provisions of the Contract;
5. Submits certifications made under the Contract and as part of their proposal that include false or fraudulent statements;
6. Becomes insolvent or declares bankruptcy;

If one or more of the stated events occur, Owner will give notice in writing to the Contractor and Surety of its intent to terminate the contract for cause. At the Owner's discretion, the notice may allow the Contractor and Surety an opportunity to cure the breach or default.

If within 10 days of the receipt of notice, the Contractor or Surety fails to remedy the breach or default to the satisfaction of the Owner, the Owner has authority to acquire equipment by other procurement action. The Contractor will be liable to the Owner for any excess costs the Owner incurs for acquiring such similar equipment.

Payment for completed equipment delivered to and accepted by the Owner shall be at the Contract price. The Owner may withhold from amounts otherwise due the Contractor for

such completed equipment, such sum as the Owner determines to be necessary to protect the Owner against loss because of Contractor default.

Owner will not terminate the Contractor's right to proceed with the Work under this clause if the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such acceptable causes include: acts of God, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, and severe weather events that substantially exceed normal conditions for the location.

If, after termination of the Contractor's right to proceed, the Owner determines that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if Owner issued the termination for the convenience the Owner.

The rights and remedies of the Owner in this clause are in addition to any other rights and remedies provided by law or under this contract.

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

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

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

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

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

ENERGY CONSERVATION REQUIREMENTS

The contractor agrees to comply with mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201*et seq*).

VETERAN'S PREFERENCE

In the employment of labor (excluding executive, administrative, and supervisory positions),

Jackson County

Crack Seal & Re-Mark Airfield

WKD Project Number 20160013.00.AT

Contractual Requirements and Title IV

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the contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 U.S.C. 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

DAVIS BACON REQUIREMENTS

1. Minimum Wages

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

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

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

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

- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

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

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

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

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

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

2. Withholding.

The Federal Aviation Administration or the sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same

prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records.

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

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security

number and current address of each covered worker, and shall provide them upon request to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

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

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

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

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

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

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

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

4. Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of

the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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

5. Compliance with Copeland Act Requirements.

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

6. Subcontracts.

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

7. Contract Termination: Debarment.

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

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

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

9. Disputes Concerning Labor Standards.

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

10. Certification of Eligibility.

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

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

(iii) Penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

EQUAL EMPLOYMENT OPPORTUNITY - 41 CFR PART 60-1.4(b)

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

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

3. The contractor will send to each labor union or representative of workers with which s/he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

5. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

6. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for

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

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

CERTIFICATION OF NONSEGREGATED FACILITIES - 41 CFR PART 60-1.8

Notice to Prospective Federally Assisted Construction Contractors

1. A Certification of Non-segregated Facilities shall be submitted prior to the award of a federally-assisted construction contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.
2. Contractors receiving federally-assisted construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of the following notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Notice to Prospective Subcontractors of Requirements for Certification of Non-Segregated Facilities

1. A Certification of Non-segregated Facilities shall be submitted prior to the award of a subcontract exceeding \$10,000, which is not exempt from the provisions of the Equal Opportunity Clause.
2. Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

CERTIFICATION OF NONSEGREGATED FACILITIES

The federally-assisted construction contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or 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 contractor certifies that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or 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, timeclocks, 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 directives or are, in fact, segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally-assisted construction contractor agrees that (except where she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or 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 she or he will retain such certifications in his files.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS - 41 CFR Part 60.4.3

1. As used in these specifications:

- a. “Covered area” means the geographical area described in the solicitation from which this contract resulted;
- b. “Director” means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
- c. “Employer identification number” means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
- d. “Minority” includes:
 - (1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);
 - (3) Asian and Pacific Islander (all persons having origins in any of the original peoples

of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of

employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. 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 contractor has a collective bargaining agreement has not referred to the contractor a minority person or female sent by 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 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 a 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 contractor's recruitment area & employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating

to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

E.E.O. COMPLIANCE – 41 CFR PART 60-1.7

a) Requirements for prime contractors and subcontractors.

(1) Each prime contractor and subcontractor shall file annually, on or before the September 30, complete and accurate reports on Standard Form 100 (EEO1) promulgated jointly by the Office of Federal Contract Compliance Programs, the Equal Employment Opportunity Commission and Plans for Progress or such form as may hereafter be promulgated in its place if such prime contractor or subcontractor (i) is not exempt from the provisions of these regulations in accordance with 601.5; (ii) has 50 or more employees; (iii) is a prime contractor or first tier subcontractor; and (iv) has a contract, subcontract or purchase order amounting to \$50,000 or more or serves as a depository of Government funds in any amount, or is a financial institution which is an issuing and paying agent for U.S. savings bonds and savings notes: Provided, That any subcontractor below the first tier which performs construction work at the site of construction shall be required to file such a report if it meets requirements of paragraphs (a)(1) (i), (ii), and (iv) of this section.

(2) Each person required by 601.7(a)(1) to submit reports shall file such a report with the contracting or administering agency within 30 days after the award to him of a contract or subcontract, unless such person has submitted such a report within 12 months preceding the date of the award. Subsequent reports shall be submitted annually in accordance with 601.7(a)(1), or at such other intervals as the Deputy Assistant Secretary may require. The Deputy Assistant Secretary may extend the time for filing any report.

(3) The Deputy Assistant Secretary or the applicant, on their own motions, may require a contractor to keep employment or other records and to furnish, in the form requested, within reasonable limits, such information as the Deputy Assistant Secretary or the applicant deems necessary for the administration of the order.

(4) Failure to file timely, complete and accurate reports as required constitutes noncompliance with the prime contractor's or subcontractor's obligations under the equal opportunity clause and is ground for the imposition by the Deputy Assistant Secretary, an

applicant, prime contractor or subcontractor, of any sanctions as authorized by the order and the regulations in this part.

(b) Requirements for bidders or prospective contractors

(1) Certification of compliance with Part 602: Affirmative Action Programs. Each agency shall require each bidder or prospective prime contractor and proposed subcontractor, where appropriate, to state in the bid or in writing at the outset of negotiations for the contract: (i) Whether it has developed and has on file at each establishment affirmative action programs pursuant to Part 602 of this chapter; (ii) whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; (iii) whether it has filed with the Joint Reporting Committee, the Deputy Assistant Secretary or the Equal Employment Opportunity Commission all reports due under the applicable filing requirements.

(2) Additional information. A bidder or prospective prime contractor or proposed subcontractor shall be required to submit such information as the Deputy Assistant Secretary requests prior to the award of the contract or subcontract. When a determination has been made to award the contract or subcontract to a specific contractor, such contractor shall be required, prior to award, or after the award, or both, to furnish such other information as the applicant or the Deputy Assistant Secretary requests.

(c) Use of reports. Reports filed pursuant to this section shall be used only in connection with the administration of the order, the Civil Rights Act of 1964, or in furtherance of the purposes of the order and said Act.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION - 41 CFR PART 60-2

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

Timetables

Goals for minority participation for each trade: 21.2%

Goals for female participation in each trade: 6.9%

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

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

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

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is Jefferson City in Jackson County, Georgia.

CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS 29 CFR PART 5

1. Overtime Requirements.

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

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

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

3. Withholding for Unpaid Wages and Liquidated Damages.

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

1. Subcontractors.

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

CLEAN AIR AND WATER POLLUTION CONTROL

Contractors and subcontractors agree:

- a. That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;
- b. To comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 U.S.C. § 740-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. § 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration. Contractor must include this requirement in all subcontracts that exceeds \$150,000.
- c. That, as a condition for the award of this contract, the contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;
- d. To include or cause to be included in any construction contract or subcontract which exceeds \$100,000 the aforementioned criteria and requirements.

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

(Reference 20 CFR part 1910)

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text.

Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

TEXTING WHEN DRIVING

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

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

COPELAND "ANTI-KICKBACK" ACT

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

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

Contractor has full responsibility to monitor compliance to the referenced statute or regulation. Contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

LOBBYING AND INFLUENCING FEDERAL EMPLOYEES

The bidder or offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

PROCUREMENT OF RECOVERED MATERIAL

Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use of products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- e) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or,
- f) The contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

EPA-designated item list is available at www.epa.gov/epawaste/consERVE/tools/cpg/products/.

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the contractor can demonstrate the item is:

- a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
- b) Fails to meet reasonable contract performance requirements; or
- c) Is only available at an unreasonable price.

SEISMIC SAFETY

The contractor agrees to ensure that all work performed under this contract, including work performed by subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety.

WAGE RATES

General Decision Number: GA160006 01/08/2016 GA2

Superseded General Decision Number: GA20150006

State: Georgia

Construction Type: Highway

Counties: Barrow, Clarke, Elbert, Greene, Jackson, Jasper, Madison, Morgan, Newton, Oconee, Oglethorpe and Walton Counties in Georgia.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016

SUGA2011-002 03/07/2011

Rates	Fringes
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CARPENTER.....	\$ 11.45
CEMENT MASON/CONCRETE FINISHER...	\$ 11.36

LABORER

Asphalt Raker.....	\$ 11.00
Asphalt Screed Person.....	\$ 10.50
Common or General.....	\$ 9.00
Form Setter.....	\$ 10.35
Guardrail Erector.....	\$ 13.50
Milling Machine Ground Person.....	\$ 10.00
Pipe Layer.....	\$ 10.20
Traffic Control Barricade Flagger.....	\$ 9.83

POWER EQUIPMENT OPERATOR:

Asphalt Distributor.....	\$ 14.10
Asphalt Paver/Spreader.....	\$ 12.21
Backhoe/Excavator.....	\$ 10.80
Broom.....	\$ 11.80
Bulldozer.....	\$ 11.60

Jackson County
Crack Seal & Re-Mark Airfield
WKD Project Number 20160013.00.AT

Contractual Requirements and Title IV

Compactor.....	\$ 10.00
Crane/Dragline.....	\$ 17.50
Crusher.....	\$ 14.00
Front End Loader.....	\$ 10.70
Material Transfer Vehicle (Shuttle Buggy).....	\$ 11.30
Mechanic.....	\$ 14.50
Milling Machine.....	\$ 11.50
Motorgrader Fine Blade.....	\$ 14.55
Motorgrader/Blade.....	\$ 14.00
Roller.....	\$ 10.00
Water Truck.....	\$ 11.25

TRUCK DRIVER

26,000 GVW & Under.....	\$ 10.76
26,001 GVW & Over.....	\$ 13.66

WELDERS receive rate prescribed for craft performing operation to which welding is incidental.

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

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Identifiers

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

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

Non-Union Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example:

SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

WAGE DETERMINATION APPEALS PROCESS

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

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by

any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

PROPOSAL

TO: Len Bernat,
Purchasing Manager
Jackson County
67 Athens Street
Jefferson, GA 30549

Date: _____

Bidders Name: _____

Address: _____

The undersigned, as bidder, hereby declares that the only person or persons interested in this bid as principal or principals is or are named herein and that no person other than those herein mentioned, has any interest in the bid or in the contract to be entered into; that this bid is made without connection with any other person, company or parties making a bid; and that it is in all respects fair and in good faith without collusion or fraud.

Bidder further declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done, that he has examined the specifications for the work and contract documents relative thereto, and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work performed. In case of conflict between words and figures, the words will govern.

Bidder proposes and agrees that if this bid is accepted, to contract with Jackson County in the form of contract specified, to furnish all necessary transportation & labor necessary to perform all construction in full and complete agreement with plans, specifications & contract documents to the full and entire satisfaction of the Jackson County as computed from the schedule of unit prices hereinafter shown. The quantities of work shown by unit prices are approximations only and the contract price will be based on the actual quantities included in the work.

Bidder agrees not to withdraw his bid within **120 days** after scheduled closing time for receipt of bids. Bidder also understands that award of this contract is subject to availability of funding.

A bidder shall be considered disqualified for any of the following reasons, among others:

- (a) Submitting more than one bid 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.

Owner reserves that right to reject any or all bids or sections thereof or to accept such bids or sections thereof, as it appears in its judgment to be in the best interest of the Owner.

Bidders are hereby notified that all bids may be rejected if the lowest responsible bid(s) received exceeds Engineer's estimate by more than 7% and it is determined that an award of the contract would cause excessive inflationary impact. Nothing in this paragraph shall limit in any manner the Owner's right to reject any and all bids if it appears in its judgment to be its best interest to do so.

Bidder agrees, if awarded the contract to commence work on the commencement date stated in the Notice to Proceed or within ten (10) days after such specified commencement date.

Bidder further agrees that in the case of failure on his part to execute said contract and the bonds required within ten (10) consecutive calendar days after written notice is given of the award of the contract, the bid bond accompanying this bid shall be paid into the hands of the Owner, as liquidated damages for such failure; otherwise, the bid bond accompanying this bid shall be returned to the undersigned.

Time of Performance: By submittal of this proposal, the undersigned acknowledges & agrees to commence work within ten (10) calendar days of the date specified in the written "Notice-to-Proceed" as issued by the OWNER. The undersigned further agrees to complete the Project within 264 Calendar days from the commencement date specified in the Notice-to-Proceed.

The undersigned acknowledges and accepts that for each and every Calendar/Working day the project remains incomplete beyond the contract time of performance, the Contractor shall pay the non-penal amount of \$1,000 per Calendar day as a liquidated damage to the OWNER.

The undersigned shall acknowledge receipt of any addenda in the appropriate space provided on the Bid Form.

Bidder acknowledges that the Owner has established a contract Disadvantaged Business Enterprise goal of TBD for this project. The bidder acknowledges and accepts the requirement to apply and document good faith efforts, as defined in Appendix A, 49 CFR Part 26, for subcontracting a portion of the prime contract to certified Disadvantaged Business Enterprises (DBE), as defined in 49 CFR Part 26 for purposes of meeting the Owner's established goal. The bidder, in complying with this requirement, proposes participation by Disadvantaged Business Enterprises as stated on the attached forms, "Utilization Statement" and "Letter of Intent"

Bidder acknowledges and accepts the requirements of the Davis-Bacon Act (29 CFR Part 5.5). Under the provisions of the Act, contractors and their subcontractors are to pay workers employed directly upon the site of the work no less than the locally prevailing wages and fringe benefits paid on projects of a similar character. The Davis-Bacon Act directs the Secretary of Labor to determine such local prevailing wage rates.

SCHEDULE OF WORK
Jackson County Airport

Item No. and Specification	Description and Unit Price in Words	Quantity	Unit	Unit Price	Extended Total
Schedule I: Runway & Taxiway					
1. M-101	Mobilization @ (write in words)	1	LS	_____	_____
2. M-101	Airfield Barriers @ (write in words)	23	EA	_____	_____
3. M-101	Runway Closure Markers @ (write in words)	2	EA	_____	_____
4. P-101	Pavement Marking Removal @ (write in words)	48,000	SF	_____	_____
5. P-101	Pavement Joint & Crack Seal Repair @ (write in words)	67,500	LF	_____	_____
6. P-620	Pavement Markiing - Yellow @ (write in words)	15,900	SF	_____	_____
7. P-620	Pavement Markiing - White Reflectorized @ (write in words)	30,560	SF	_____	_____

TOTAL BID: \$ _____

Note: Schedule II on the next page lists four Additive Alternates.

SCHEDULE OF WORK
Jackson County Airport

Item No. and Specification	Description and Unit Price in Words	Quantity	Unit	Unit Price	Extended Total
Additive Alternate #1					
1. P-620	Enhanced Pavement Marking - Black for Runway & Hold Positions @ (write in words)	8,780	SF	_____	_____
Additive Alternate #2					
1. P-620	Taxiway Edge Marking - Conversion of Runway to Taxiway @ (write in words)	4,200	SF	_____	_____
2. P-620	Taxiway Shoulder Marking - Conversion of Runway to Taxiway @ (write in words)	800	SF	_____	_____
Additive Alternate #3					
1. P-101	Pavement Joint and Crack Seal Repair for East & West Apron @ (write in words)	20,000	LF	_____	_____
2. P-620	Pavement Marking Removal for East & West Apron @ (write in words)	2,000	SF	_____	_____
3. P-620	Pavement Markings for East & West Apron @ (write in words)	2,000	SF	_____	_____
Additive Alternate #4					
1. L-108	#8 5KV L824 Power Cable @ (write in words)	2,100	LF	_____	_____
2. L-108	#6 Bare Copper Counterpoise @ (write in words)	1,400	LF	_____	_____
3. L-125	Guidance Signs @ (write in words)	5	EA	_____	_____

SCHEDULE OF WORK
Jackson County Airport

The Owner reserves the right to award and/or reject any or all schedules of work.

Contract Time: 60 Calendar days

Liquidated Damages \$1,000.00 per Calendar Day

DBE Goal: TBD

Current Georgia Contractor License No: _____ Respectfully Submitted,

Date License Expires: _____

Signature: _____

Contractor

Address

ACKNOWLEDGEMENT OF ADDENDA

No. Date Signature

1. _____

2. _____

3. _____

By

Title

Date

SCHEDULE OF WORK
Jackson County Airport

Intentionally Left Blank

Bid Bond
(Attach Bid Bond Here)

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EQUAL EMPLOYMENT OPPORTUNITY (EEO) REPORT STATEMENT
(41 CFR Part 60-1.7)

The Bidder 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 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 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 has _____ has not ___ filed with the Joint Reporting Committee the annual compliance report on Standard Form 100 (EEO-1 Report).
4. The Bidder does _____ does not ___ employ fifty (50) or more employees.

Name of Bidder: _____

By: _____

Title: _____

Date: _____

DISADVANTAGED BUSINESS ENTERPRISE (DBE)

Policy. The requirements of 49 CFR Part 26, Regulations of the U.S. Department of Transportation, apply to this contract. It is the policy of the Jackson County to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. All firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this bid specification. These requirements apply to all bidders/offerors, including those who qualify as a DBE. A DBE contract goal of TBD has been established for this contract. The bidder/offeror shall make good faith efforts, as defined in the Instruction to Bidders section of the specifications and Appendix A, 49 CFR Part 26 (Attachment 1), to meet the contract goal by utilizing DBEs in the performance of this contract.

DBE Obligation. The contractor agrees to ensure that disadvantaged business enterprises as defined in 49 CFR Part 26 have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with federal funds provided under this agreement. In this regard, all contractors shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 to ensure that disadvantaged business enterprises have the maximum opportunity to compete for and perform contracts. Contractors shall not discriminate on the basis of race, color, national origin, or sex in the performance of this or subsequent subcontracts.

DBE Participation. The Bidder shall provide the following information for disadvantaged subcontractors whom it proposes to engage in carrying out and completing the work called for by this proposal. No change shall be made in any of the disadvantaged subcontractors proposed to be engaged by the bidder, should it be the successful bidder, following the opening of this proposal without the prior written consent and approval of the Jackson County.

LISTING OF DBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS	DBE	ITEM NO.	ITEM DESCRIPTION	* AGREED UPON UNIT PRICE	** DOLLAR VOLUME OF ITEM

* The Dollar Volume shown in this column shall be the Actual Price Agreed Upon by the Prime Contractor and the DBE subcontractor, and these prices will be used to determine the percentage of the DBE participation in the contract.

** Must have entry even if figure to be entered is zero.

** Dollar Volume of DBE Subcontractor \$ _____
 Percentage of Total Contract Bid Price _____%

This form must be completed in order for the Bid to be considered responsive and be publicly read. Bidders with no DBE participation must so indicate this on the form by entering the word or number zero.

LETTER OF INTENT
Disadvantage 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 Certifying Agency: _____ Expiration Date: _____

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

Classification: Prime Contractor Subcontractor Joint Venture
 Manufacturer Supplier

Work item(s) to be performed by DBE	Description of Work Item	Quantity	Total

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

DBE contract amount: \$ _____ Percent of total contract: _____ %

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 and Affirmation shall be null and void.

**UTILIZATION STATEMENT
Disadvantage Business Enterprise**

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

- The bidder/offeror is committed to a minimum of 21.2% DBE utilization on this contract.**
- The bidder/offeror, while unable to meet the DBE goal of 21.2%, hereby commits to a minimum of _____% DBE utilization on 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 Right Staff of the Federal Aviation Administration.

Bidder's/Offeror's Firm Name

Signature

Date

DBE UTILIZATION SUMMARY

<u>Percentage</u>	<u>Contract Amount</u>	<u>DBE Amount</u>	<u>Contract</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, Bidder must provide written documentation of the good faith efforts as required by 49 CFR Part 26.

CERTIFICATIONS

The undersigned hereby certifies to the Jackson County that:

TRADE RESTRICTION CERTIFICATION

The contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

- a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
- b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;
- c. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government.

Further, the contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

The contractor shall provide immediate written notice to the sponsor if the contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

BUY AMERICAN CERTIFICATE

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

A bidder or offeror must submit the appropriate Buy America certification (below) with all bids or offers on AIP funded projects. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive.

Certificate of Buy American Compliance for Manufactured Products

(Non-building construction projects, equipment acquisition projects)

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. 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 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. 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.

Date

Signature

Company Name

Title

CERTIFICATION OF NONSEGREGATED FACILITIES

The federally-assisted construction contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or 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 contractor certifies that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or 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, timeclocks, 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 directives or are, in fact, segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally-assisted construction contractor agrees

that (except where she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or 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 she or he will retain such certifications in his files.

CERTIFICATION OF DEBARMENT, SUSPENSION, INELIGIBILITY & VOLUNTARY EXCLUSION

The bidder/offeror certifies, by submission of this bid or acceptance of this contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees by submitting this bid that it will include this clause without modification in all lower tier transactions, solicitations, bids, contracts, and subcontracts. Where the bidder/offeror/contractor or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/bid.

Name of Bidder: _____

Signature: _____

Title: _____

Date: _____

AFFIDAVIT OF NON-COLLUSION

STATE OF _____

COUNTY _____

Personally appeared before me _____ being
duly sworn says that he is a member of the firm of _____
and further says that his firm, association, or cooperation has not, either directly or indirectly,
entered any agreement, participated in any collusion, or otherwise taken any action in resistant of
for competitive bidding in connection with the submission of a bid on the above-named project.

Further, _____ swears and affirms that all legal
formalities required for the proper execution of affidavits pursuant to the laws of his state have
been complied with and further agrees on behalf of himself, his firm association, or corporation,
that in any subsequent prosecution of perjury of him, his firm association, or corporation, it shall
note a defense to such charge perjury that said formalities were not in fact complied with.

Name and Title

Legal Signature

SWORN to me before this _____ day of _____, 2016

Notary Public for _____

CONTRACT

THIS CONTRACT, made and entered into this _____ day of _____, 2016, by and between the Jackson County, hereinafter called the Owner and _____, hereinafter called the Contractor.

WITNESSETH: That the Contractor, for the consideration hereinafter fully set out, and the Owner, for the construction of work performed, agree that:

1. Scope of Work: Contractor shall furnish and deliver all the materials and perform all the work in the manner and form as provided in the following enumerated plans, specifications and contract documents which are attached hereto and made a part thereof as if fully contained herein:

SPECIFICATIONS AND CONTRACT DOCUMENTS:

- (a) Notice to Bidders
- (b) Instructions to Bidders
- (c) Proposal (as Accepted)
- (d) Performance Bond and Labor and Materials Payment Bond
- (e) General Provisions
- (f) Technical Specifications
- (g) Addendum No. 1 _____
- (h) Addendum No. 2 _____
- (i) Addendum No. 3 _____

Contract Amount \$ _____

Contract Time: 60 Calendar Days

Liquidated Damages for Contract Time Overrun: \$1,000 per Calendar Day

2. The Contractor shall commence the work to be performed under this contract not later than the date set by the Engineer in written notice to proceed, said date to be not less than ten (10) days after issuance of notice.

3. The Owner hereby agrees to pay to the Contractor for the faithful performance of this contract, subject to additions and deductions as provided in the specifications or proposal, in lawful money of the United States, such unit/or lump sum prices as are set forth in the accepted Proposal for quantities of each item actually accomplished. The Contractor shall repair or replace all defective work promptly and at no cost, charge or expense to the Owner. The warranty and guaranty, as provided for in this paragraph, are in addition to and not in limitation of any other bond, warranty or guaranty provided to the Owner by the Contractor or by a manufacturer, supplier or otherwise, or any other cause of action, right or remedy.

4. The Owner shall make partial payments to the Contractor on the basis of a duly certified and approved estimate of work performed during the preceding calendar month by the Contractor, less the specified retainage. All work must be performed strictly in accordance with this Contract and all work is subject to acceptance by the Owner.

5. Upon submission by the Contractor of evidence satisfactory to the Owner that all payrolls, materials, bills and other cost incurred by the Contractor in connection with the construction of the work have been paid in full, final payment on account of this Contract shall be made within thirty

(30) days after the completion by the Contractor of all work covered by this Contract and the acceptance of such work by the Owner.

6. If at any time after the execution of this Contract and the bonds hereto attached; the Owner shall deem the surety or sureties upon such bond or bonds to be unsatisfactory, or if for any reason any such bond ceases to be adequate to cover the performance of the work or the payment for labor or materials, the Contractor shall, at his expense and within five (5) days after the receipt of notice from the Owner to do so, furnish an additional bond or bonds in such form and amount and with such surety or sureties as shall be satisfactory to the Owner. In such event, no further payment to the Contractor shall be deemed to be due under this Contract until such new or additional bonds shall have been furnished in a manner and form satisfactory to the Owner.

7. In respect to each phase of the work and for one (1) year from and after the date on which such phase is accepted for use by the Owner, or for such longer period as may be provided for in any written warranty or guaranty, the Contractor warrants and guarantees the work (including but not limited to all labor and materials in respect thereto); and the Contractor shall repair or replace all defective work promptly and at no cost, charge or expense to the Owner. The warranty and guaranty, as provided for in this paragraph, are in addition to and not in limitation of any other bond, warranty or guaranty provided to the Owner by the Contractor or by a manufacturer, supplier or otherwise, or any other cause of action, right or remedy.

8. The Owner may in its sole discretion suspend this Contract for ninety (90) days or terminate this Contract at any time, whereupon the Contractor shall be paid only for the work actually performed, the materials actually delivered to the job site, and the materials specifically ordered by the Contractor for this project if such specifically ordered materials cannot be returned to the manufacturer or supplier by the Contractor at no cost or expense to the Contractor. (It is understood, however, that the Contractor shall return all specifically ordered materials if the Owner agrees in writing to reimburse the Contractor for all of the latter's costs and expenses incurred in so returning the materials.) The Contractor shall not be entitled to recover any anticipated profits. This paragraph applies only to those situations where the Owner suspends or terminates this Contract for reasons other than the Contractor's performance or breach of or default under this Contract.

9. This Contract is made and entered into in Jefferson City in Jackson County, Georgia, and Georgia law shall govern and apply to this Contract. In the event of a dispute or disputes between the parties hereto, and in the event litigation is instituted, such litigation shall be commenced only in a state superior or district court in Jefferson City in Jackson County, Georgia, and each party hereby waives any right or claim for a change of venue from Jefferson City in Jackson County, Georgia.

10. The parties hereto acknowledge, represent, state and warrant that they have signed and executed this Contract under seal, that they have adopted their respective seals as affixed to this Contract, and that they are executing this Contract with the intent that it shall be a sealed instrument.

11. Regardless of which party hereto is responsible for the preparation and drafting of this Contract, it shall not be construed more strictly against either party.

12. Whenever the context permits, words herein in any gender shall include the masculine, feminine and neuter.

13. This Contract may not be assigned by the Contractor unless the Owner has consented in writing to the assignment.

IN WITNESS WHEREOF, the Owner and Contractor hereto have executed this contract under seal on the date first above written in five counterparts, each of which shall be deemed an original contract.

WITNESS:

(As to Contractor)

(Contractor)

WITNESS:

By _____
(Seal)

(Owner)

By _____
(Seal)

Intentionally Left Blank

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That _____, as Principal, hereinafter called Contractor, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto Jackson County, as Obligee, hereinafter called Owner, in the amount of _____ Dollars (\$ _____), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____, entered into a contract with Owner for the Crack Seal and Re-Mark Airfield Project in accordance with Drawings and Specifications prepared by W. K. Dickson & Company, Inc., which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Owner.

Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

- (1) Complete the Contract in accordance with its terms and conditions, or
- (2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, upon determination by Surety of the lowest responsible bidder, or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price," as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this bond must be instituted before the expiration of (2) two years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of the Owner.

Signed and sealed this _____ day of _____, 2016.

(Witness)

(Principal) (Seal)

(Title)

(Witness)

(Surety) (Seal)

(Title)

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That _____, as Principal, hereinafter called Principal, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto Jackson County, as Obligee, hereinafter called Owner, for the use and benefit of claimants as herein below defined, in the amount of _____ Dollars (\$ _____), for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____, entered into a contract with Owner for the Crack Seal & Re-Mark Airfield in accordance with Drawings and Specifications prepared by W. K. Dickson & Company, Inc., which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental or equipment directly applicable to the Contract.
2. The above-named Principal and Surety hereby jointly and severally agree with the Owner that every Claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgement for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant.
 - a. Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the Owner, or the Surety above-named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

b. After the expiration of one (1) year following the date on which Principal ceased work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

c. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

Signed and sealed this _____ day of _____, 2016.

(Witness)

(Principal) (Seal)

(Title)

(Witness)

(Surety) (Seal)

(Title)

DIVISION II

GENERAL PROVISIONS

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SECTION 10 DEFINITION OF TERMS

Whenever 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 interpreted as follows:

10-01 AASHTO. The American Association of State Highway and Transportation Officials, the successor association to AASHO.

10-02 ACCESS ROAD. The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public highway.

10-03 ADVERTISEMENT. A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.

10-04 AIP. The Airport Improvement Program, a grant-in-aid program, administered by the Federal Aviation Administration.

10-05 AIR OPERATIONS AREA. For the purpose of these specifications, the term air operations area shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.

10-06 AIRPORT. Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; and airport buildings and facilities located in any of these areas, and includes a heliport.

10-07 ASTM. The American Society for Testing and Materials.

10-08 AWARD. The acceptance, by the Owner, of the successful bidder's proposal.

10-09 BIDDER. Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.

10-10 BUILDING AREA. 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.

10-11 CALENDAR DAY. Every day shown on the calendar.

10-12 CHANGE ORDER. 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 the work affected by such changes. The work, covered by a change order, shall be within the scope of the contract.

10-13 CONTRACT. The written agreement covering the work to be performed. The awarded contract shall include, but is not limited to: The Advertisement; The Contract Form; The Proposal; The Performance Bond; The Payment Bond; any required insurance certificates; The Specifications; The Plans, and any addenda issued to bidders. The terms "Contract" and Agreement" may be used interchangeably in this document.

10-14 CONTRACT ITEM (PAY ITEM). A specific unit of work for which a price is provided in the contract.

10-15 CONTRACT TIME. 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 calendar or working days, the contract shall be completed by that date.

10-16 CONTRACTOR. 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.

10-17 DRAINAGE SYSTEM. The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.

10-18 ENGINEER. The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering inspection of the contract work and acting directly or through an authorized representative.

10-19 EQUIPMENT. All machinery, together with the necessary supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper construction and acceptable completion of the work.

10-20 EXTRA WORK. An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Engineer to be necessary to complete the work within the intended scope of the contract as previously modified.

10-21 FAA. Federal Aviation Administration of the U.S. Department of Transportation. When used to designate a person, FAA shall mean the Administrator or his/her duly authorized representative.

10-22 FEDERAL SPECIFICATIONS. Federal Specifications and Standards, Commercial Item Descriptions, and supplements, amendments, and indices thereto are prepared and issued by the General Services Administration of the Federal Government.

10-23 FORCE ACCOUNT. Force account construction work is construction that is accomplished through the use of material, equipment, labor, and supervision provided by the Owner or by another public agency pursuant to an agreement with the Owner.

10-24 INSPECTOR. An authorized representative of the Engineer assigned to make all necessary inspections and/or tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.

10-25 INTENTION OF TERMS. 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 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, subject in each case to the final determination of the Owner.

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.

10-26 LABORATORY. The official testing laboratories of the Owner or such other laboratories as may be designated by the Engineer.

10-27 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 landing at, taking off from, or taxiing on the airport surface.

10-28 MAJOR AND MINOR CONTRACT ITEMS. 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 percent of the total amount of the award contract. All other items shall be considered minor contract items.

10-29 MATERIALS. Any substance specified for use in the construction of the contract work

10-30 NOTICE TO PROCEED. 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.

10-31 OWNER. The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. For AIP contracts, the term "sponsor" shall have the same meaning as the term "Owner." Where the term "Owner" is capitalized in this document, it shall mean airport owner or sponsor only.

10-32 PAVEMENT. The combined surface course, base course, and subbase course, if any, considered as a single unit.

10-33 PAYMENT BOND. The approved form of security furnished by the Contractor and his/her surety as a guaranty that he will pay in full all bills and accounts for materials and labor used in the construction of the work.

10-34 PERFORMANCE BOND. The approved form of security furnished by the Contractor and his/her surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.

10-35 PLANS. The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract documents.. The terms "plans" and "drawings" may be used interchangeably in the contract documents..

10-36 PROJECT. The agreed scope of work for accomplishing specific airport development with respect to a particular airport.

10-37 PROPOSAL. The written offer of the bidder (when submitted on the approved bid/proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications. The terms "proposal" and "bid" shall be interchangeable throughout these contract documents.

10-38 PROPOSAL GUARANTY. The security furnished with a proposal to guarantee that the bidder will enter into a contract if his/her proposal is accepted by the Owner.

10-39 RUNWAY. Area on the airport prepared for the landing and takeoff of aircraft.

10-40 SPECIFICATIONS. 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.

10-41 SPONSOR. See definition above of "Owner."

10-42 STRUCTURES. Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, hand-holes, lighting fixtures and bases; transformers; flexible and rigid pavements; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.

10-43 SUBGRADE. The soil that forms the pavement foundation.

10-44 SUPERINTENDENT. The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the Engineer, and who shall supervise and direct the construction.

10-45 SUPPLEMENTAL AGREEMENT. A written agreement between the Contractor and the Owner covering (1) work that would increase or decrease the total amount of the awarded contract, or any major contract item, by more than 25 percent, such increased or decreased work being within the scope of the originally awarded contract; or (2) work that is not within the scope of the originally awarded contract.

10-46 SURETY. The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.

10-47 TAXIWAY. For the purpose of this document, the term taxiway means 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 or aircraft parking areas.

10-48 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.

10-49 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 6 hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work, requiring the presence of an inspector, will be considered as working days.

10-50 WRITTEN NOTICE. The term "notice" as used herein shall mean and include all written notices, demands, instructions, claims, approvals, and disapprovals furnished by the Owner or the Engineer to obtain compliance with contract requirements. Written notice shall be deemed to have been duly served when delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or to an authorized representative of such individual, firm or corporation, or when delivered to or sent by registered or certified mail to the last business address known by the person giving the notice.

END OF SECTION 10

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SECTION 20 PROPOSAL REQUIREMENTS AND CONDITIONS

20-01 ADVERTISEMENT (Notice to Bidders). A copy of the original Advertisement for Bids is included with the Bid Forms. Prospective bidders should note that dates, times, and other terms provided in the Advertisement for Bids may be modified by Addendum.

20-02 PREQUALIFICATION OF BIDDERS. Each bidder shall furnish owner satisfactory evidence of his/her competency to perform the proposed work. Such evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, a list of equipment that would be available for work, and a list of key personnel that would be available. In addition, each bidder shall furnish the owner satisfactory evidence of his/her financial responsibility. Such evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of bidder's financial resources and liabilities as of the last calendar year or Contractor'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 his/her 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 his/her (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 he is prequalified with the State Highway Division and is on the current approved "bidder's list" of the state in which the proposed work is located. Such evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports hereinbefore specified. Each bidder shall submit "evidence of competency" and "evidence of financial responsibility" to the Owner at the time of bid opening.

20-03 CONTENTS OF PROPOSAL FORMS. Owner shall furnish bidders with proposal forms. All papers bound with or attached to the proposal forms are necessary and must not be detached. The plans specifications, and other documents designated in the proposal form shall be considered a part of the proposal whether attached or not.

20-04 ISSUANCE OF PROPOSAL FORMS. Owner reserves right to refuse to issue a proposal form to a prospective bidder should such bidder be 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 & materials on former contract in force (with the Owner) at the time the Owner issues the proposal to a prospective bidder.
- c. Contractor default under previous contracts with the Owner.
- d. 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 hereinafter provided in the subsection titled ALTERATION OF WORK AND QUANTITIES of Section 40 without in any way invalidating the unit bid prices.

Although the result of a careful estimating process, quantities are provided only as a basis for comparison of bids and the award of contract. It is understood that actual quantities may be increased or decreased as hereinafter provided without in any way invalidating 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. He shall satisfy himself as to the character, quality, and quantities of work to be performed, materials to be furnished, and as to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the proposed contract, plans, and specifications and that the Contract Documents are sufficient in scope and detail to indicate and convey clear understanding of all terms and conditions for performance of the work.

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 he may make or obtain from his/her 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 his/her proposal on the forms furnished by the Owner. All blank spaces in the proposal forms 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 for which he proposes to do 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 sign his/her proposal correctly and in ink. If the proposal is made by an individual, his/her 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 under the laws of which 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 his/her authority to do so and that the signature is binding upon the firm or corporation.

All questions concerning the meaning or intent of any portion of the Contract Documents are to be directed to the Engineer not later than 7 days prior to the date set for the opening of bids. Interpretations or clarifications considered necessary by the Engineer in response to such questions will be issued by the Engineer as addenda to the Contract Documents and supplied to all prospective bidders. Addenda to the Contract Documents issued during the bidding period will be considered a part of the Contract Documents and will become a part of the Contract. Receipt of

addenda shall be acknowledged by the Bidder on the proposal form. Neither the Owner nor the Engineer will make oral interpretations or clarifications to prospective bidders.

20-09 RESPONSIVE AND RESPONSIBLE BIDDER. A responsive bid conforms to all significant terms and conditions contained in the Sponsor's invitation for bid. It is Sponsor'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 49 CFR 18.36(b)(8). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and financial as well as technical resources.

20-08 IRREGULAR PROPOSALS. Proposals shall be considered irregular for 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 proposal does not contain a unit price for each pay item listed in proposal, except in 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.

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.

20-09 BID GUARANTY/BID BOND. Each bid shall be accompanied by a cash deposit, or a certified check drawn on a bank or trust company insured by the FDIC, or a bid bond of 5% of the total amount of the bid executed by a surety company licensed under the laws of Georgia to execute such bonds. Bid guaranty will be retained by the Owner as liquidated damages should the successful bidder fail to properly execute the Contract within ten (10) days after the award and to provide satisfactory surety as required by law.

20-10 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 before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened.

20-11 WITHDRAWAL OR REVISION OF PROPOSALS. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the Owner in writing or by telegram 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.

20-12 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.

20-13 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 the subsection titled ISSUANCE OF PROPOSAL FORMS of this section.

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 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 proposal is irregular as specified in subsection titled IRREGULAR PROPOSALS of Section 20.
- b. If the bidder is disqualified for any of the reasons specified in the subsection titled DISQUALIFICATION OF BIDDERS of Section 20.

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

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

Award of the contract shall be made by the Owner to the lowest, qualified bidder whose proposal conforms to the cited requirements of the Owner.

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 the subsection titled APPROVAL OF CONTRACT of this section.

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 hereinbefore specified in the subsection titled CONSIDERATION OF PROPOSALS of this section. Proposal guaranties of two lowest bidders will be retained by Owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. Successful bidder's proposal guaranty will be returned as soon as the Owner receives contracts bonds as specified in the subsection titled REQUIREMENTS OF CONTRACT BONDS of this section.

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. Successful bidder shall sign (execute) necessary agreements for entering into the contract and return such signed contract to the owner, along with the fully executed surety bond or bonds specified in the subsection titled REQUIREMENTS OF CONTRACT BONDS of this section, within 10 calendar days from the date mailed or otherwise delivered to the successful bidder. If the contract is mailed, special handling is recommended.

49 CFR Part 26 provides that each contract the owner signs with a contractor (and each subcontract the prime contractor signs with a subcontractor) shall include the following assurance:

“The contractor, sub-recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of Department of Transportation (DOT) assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.”

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 10 calendar day period specified in the subsection titled REQUIREMENTS OF CONTRACT BONDS of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidation of damages to the Owner.

30-09 BIDS TO BE RETAINED. No bid shall be withdrawn within 120 days from the scheduled opening of bids pending the execution of a Contract between the Owner and the successful Bidder. Should the successful Bidder default and not execute a contract, the Contract may be offered to the next lowest bidder.

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 and shall have the right to make such alterations in the work as may be necessary or desirable to complete the work originally intended in an acceptable manner. Unless otherwise specified herein, the Engineer shall be and is hereby authorized to make such alterations in the work as may increase or decrease the originally awarded contract quantities, provided that the aggregate of such alterations does not change the total contract cost or the total cost of any major contract item by more than 25 percent (total cost being based on the unit prices and estimated quantities in the awarded contract).

Alterations that do not exceed the 25 percent limitation shall not invalidate the contract nor release the surety, and the Contractor agrees to accept payment for such alterations as if the altered work had been a part of the original contract. These alterations that are for work within the general scope of the contract shall be covered by "Change Orders" issued by the Engineer. Change orders for altered work shall include extensions of contract time where, in the Engineer's opinion, such extensions are commensurate with the amount and difficulty of added work.

The Engineer may authorize minor changes or alterations in the work not involving change in Contract Price and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. Such alterations shall not invalidate the contract nor release the surety. If the Contractor believes that any minor change or alteration authorized by the Engineer entitles him/her to an increase in the Contract Price or extension of Contract Time, he/she may make a claim therefore as provided in these documents.

Except in an emergency endangering life or property and except as otherwise provided above, no change shall be made by the Contractor except upon prior written Change Order by the Owner authorizing such change. ***Additional work performed by the Contractor without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time.*** The Owner will execute appropriate Change Orders prepared by and approved by the Engineer covering reasonable changes in the work performed in an emergency endangering life or property. Changes in the work resulting from emergency shall not invalidate the contract nor release the surety.

The Engineer will not be responsible for a misunderstanding claimed by the Contractor of verbal instructions which have not been confirmed in writing, and in no case shall instructions be interpreted as permitting a departure from the Contract Documents unless such instruction is confirmed in writing and supported by a proper Change Order or Field Order, whether or not the cost is affected.

It is the Contractor's responsibility to notify his/her surety of any changes affecting the general scope of the work or change in the Contract Price, and the amount of applicable bonds shall be adjusted accordingly. The Contractor will furnish proof of such adjustment to the Engineer. Should the aggregate amount of altered work exceed the 25 percent limitation hereinbefore specified, such excess altered work shall be covered by supplemental agreement. 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 Engineer may, in the Owner's best interest, omit from the work any contract item, except major contract items. 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 not be 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 the subsection titled PAYMENT FOR OMITTED ITEMS of Section 90.

40-04 EXTRA WORK. Should acceptable completion of the contract require the Contractor to perform an item of work for which no basis of payment has been provided in the original contract or previously issued change orders or supplemental agreements, the same shall be called "Extra Work." Extra Work that is within the general scope of the contract shall be covered by written change order. Change orders for such 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 Engineer's opinion, is necessary for completion of such Extra Work.

When determined by the Engineer to be in the Owner's best interest, he may order the Contractor to proceed with Extra Work by force account as provided in the subsection titled PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK of Section 90.

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 hereinbefore defined in the subsection titled SUPPLEMENTAL AGREEMENT of Section 10.

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 Contractor's equipment & personnel, is the most important consideration. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas of the airport with respect to his/her own operations and the operations of all his/her subcontractors as specified in the subsection titled LIMITATION OF OPERATIONS of Section 80. 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 the subsection titled CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS in Section 70.

With respect to his/her own operations and the operations of all his/her 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.

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. Contractor shall furnish, erect, and maintain barricades, warning signs, flag-person, and other traffic control devices in reasonable conformity with the manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office), unless otherwise specified herein. Contractor shall also construct & maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

Contractor shall make his/her own estimate of all labor, materials, equipment, and incidentals necessary for providing the maintenance of aircraft and vehicular traffic as specified in this subsection.

The cost of maintaining the aircraft and vehicular traffic specified in this subsection shall not be measured or paid for directly, but shall be included in the various contract items.

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 Engineer shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the Engineer in accordance with the provisions of the contract.

Except as provided in the subsection titled RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK of this section, 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 utilized in the work as otherwise provided for in the contract and shall remain the property of the Owner when so utilized 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 either embankment or waste, he may at his/her option either:

- a. Use such material in another contract item, providing such use is approved by the Engineer 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 Engineer; or
- c. Use such material for his/her 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., he shall request the Engineer's approval in advance of such use.

Should the Engineer 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 his/her own 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 his/her use of such material so used in the work or removed from the site.

Should the Engineer 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 his/her exercise of option a., b., or c, as listed above.

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.

40-09 FINAL CLEANING UP. 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. He 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 such property owner. The Contractor shall also remove all erosion control measures when required after final acceptance has been issued and/or final payment has been made.

END OF SECTION 40

SECTION 50 CONTROL OF WORK

50-01 AUTHORITY OF THE ENGINEER. The Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, and as to the manner of performance and rate of progress of the work. The Engineer shall decide all questions that may arise as to the interpretation of the specifications or plans relating to the work. The Engineer shall determine the amount and quality of the several kinds of work performed and materials furnished which are to be paid for the under contract.

The Engineer does not have the authority to accept pavements that do not conform to FAA 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 Engineer 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 his/her opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, he will advise the Owner of his/her determination that the affected work be accepted and remain in place. In this event, the Engineer will document his/her 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. The Engineer's determination and recommended contract price adjustments will be based on good engineering judgment and such tests or retests of the affected work as are, in his/her opinion, needed. Changes in contract price shall be covered by contract modifications (change order or supplemental agreement) as applicable.

If the Engineer 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 Engineer's written orders.

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

For the purpose of this subsection, the term "reasonably close conformity" is also intended to provide the Engineer with the authority, after consultation with the FAA, to use good engineering judgment in his/her determinations as to acceptance of work that is not in strict conformity but will provide a finished product equal to or better than that intended by the requirements of the contract, plans and specifications.

The Engineer is not 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 contract requirements. 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 FAA advisory circulars; contract general provisions shall govern over plans, cited standards for materials or testing, and cited FAA advisory circulars; plans shall govern over cited standards for materials or testing and cited FAA advisory circulars. If any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

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, he shall immediately call upon the Engineer for his/her interpretation and decision, and such decision shall be final. Any work, which may reasonably be inferred from the Specifications or Drawings as being required to produce the intended result, shall be supplied whether or not it is specifically called for. Work, materials or equipment described in words which so applied have a well known technical trade meaning, shall be deemed to refer to such recognized standards.

Miscellaneous items, accessories and work which are not specifically mentioned, but which are essential to produce a complete and properly operating installation, or usable structure or plant, providing the indicated function, shall be furnished and installed without change in the Contract Price. Such miscellaneous items and accessories shall be of the same quality standards, including material, style, finish, strength class, weight and other applicable characteristics, as specified for the major component of which the miscellaneous item or accessory is an essential part, and shall be approved by the Engineer before installation. Above requirement is not intended to include major components not covered by or inferable from the Drawings, Plans & Specifications.

Work of all trades under this contract shall be coordinated by the Contractor in such a manner as to obtain the best workmanship possible for the entire project and all components of the work shall be installed or erected in accordance with the best practices of the particular trade.

The Contractor shall fully complete the work and shall be responsible for his portion of the work under the contract. If he is prevented from doing so by any limitations of the Drawings/Plans or Specifications, the Contractor shall immediately notify the Engineer in writing of such limitations before proceeding with the construction in the area where the problem or limitation exists. Standard specifications or manufacturers' literature, when referenced, shall be of the latest revision or printing unless otherwise stated, and is intended to establish the minimum requirements acceptable.

The Contractor will give all notices and comply with all laws, ordinances, rules and regulations applicable to the work and shall protect and indemnify the Owner and all his 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 himself, his employees, Subcontractors or their employees. If the Contractor observes that the specifications or drawings are at variance therewith,

he will give the Engineer prompt written notice thereof and any necessary changes shall be adjusted by an appropriate modification. If the Contractor performs any work to which notice should have been given to the Engineer pursuant to this paragraph without giving such notice, he will bear all costs arising therefrom.

50-04 COOPERATION OF CONTRACTOR. The Contractor will be supplied with two copies each of the plans and specifications. He shall have available on the work at all times one copy each of the plans and specifications. Additional copies of plans and specifications may be obtained by the Contractor for the cost of reproduction. Engineer shall not be required to provide the Contractor with electronic drawing files for use in staking out or estimating quantities.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and he shall cooperate with the Engineer and his/her inspectors and with other contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times acceptable to the Engineer, whose name and qualifications will be furnished to the Engineer at the preconstruction meeting. Contractor's Superintendent shall not be replaced without prior written notice to the Engineer except under extraordinary circumstances. In the event of such extraordinary circumstances, immediate written notice shall be given to the Engineer of a temporary or permanent replacement who is fully authorized as the Contractor's 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 Engineer or his authorized representative.

50-05 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 his/her work so as 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 his/her contract and shall protect and save harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced by him because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange his/her work and shall place and dispose of the materials being used so as not to interfere with the operations of the other Contractors within the limits of the same project. He shall join his/her work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the 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) is listed in the Detailed Specifications. Except as so listed, the Contractor shall not permit any individual, partnership or corporation to excavate or otherwise disturb such utility services and facilities located within the limits of the work without the written permission of the Engineer. Should the Owner of any 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 so as to facilitate such construction, reconstruction or maintenance by others, whether or not listed in the Detailed Specifications. When so directed by the Engineer, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others; provided, however, should the Contractor believe such repair work entitles him to an increase in contract price and/or an extension of contract time, he may make a claim therefore as provided here within. Except, as otherwise provided immediately above, 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.

Nothing contained in this section shall relieve the Contractor of his responsibility for schedule or quality of work.

50-06 CONSTRUCTION LAYOUT AND STAKES. The Engineer shall establish horizontal and vertical control only. The Contractor must establish all layout required for the construction of the work. Such stakes and markings as the Engineer may set for either his/her own or the Contractor's guidance shall be preserved by the Contractor. In case of negligence on the part of the Contractor, or his/her 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.

Contractor will be required to furnish all lines, grades and measurements from the control points necessary for proper prosecution & control of work contracted for under these specifications.

The Contractor must give weekly copies of the survey notes to the Engineer so that the Engineer may check them as to accuracy and method of staking. All areas that are staked by the Contractor must be checked by the Engineer prior to beginning any work in the area. The Engineer will make periodic checks of the grades and alignment set by the Contractor. In case of error on the part of the Contractor, or his/her employees, resulting in establishing grades and/or alignment that are not in accordance with the plans or established by the Engineer, all construction not in accordance with the established grades and/or alignment shall be replaced without additional cost to the Owner.

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

Construction Staking and Layout includes but is not limited to:

- Clearing and Grubbing perimeter staking.
- Rough Grade slope stakes at 100-foot stations.
- Drainage Swales slope stakes and flow line blue tops at 50-foot stations.
- Subgrade blue tops at 25 foot stations and 25 foot offset distance (max.) for the following section locations:
 - Runway – minimum 5 per station
 - Taxiways – minimum 3 per station

- Holding apron areas – minimum 3 per station
- Roadways – minimum 3 per station
- Base Course blue tops at 25 foot stations and 25 foot offset distance (max.) for the following section locations:
 - Runway – minimum 5 per station
 - Taxiways – minimum 3 per station
 - Holding apron areas – minimum 3 per station
- Pavement areas:
 - Edge of Pavement hubs and tacks (for stringline by Contractor) at 100' stations
 - Between Lifts at 25 foot stations for the following section locations:
 - Runways – each paving lane width
 - Taxiways – each paving lane width
 - Holding areas – each paving lane width
- After finish paving operations at 50 foot stations
- All paved areas – Edge of each paving lane prior to next paving lot
- Shoulder and safety area blue tops at 50 foot stations and at all break points with maximum of 50 foot offsets
- Fence lines at 100 foot stations
- Electrical and Communications System locations, lines and grades including but not limited to duct runs, connections, fixtures, signs, lights, VASIs, PAPIs, REILs, Wind Cones, Distance Markers (signs), pull boxes and manholes.
- Drain lines, cut stakes and alignment on 25-foot stations, inlet and manholes.
- Painting and Striping layout (pinned with 1.5 inch PK nails) marked for paint Contractor. (All nails shall be removed after painting)
- Laser, or other automatic control devices, shall be checked with temporary control point or grade hub at a minimum of once per 400 feet per pass (i.e. paving lane).

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

50-07 AUTOMATICALLY CONTROLLED EQUIPMENT. Whenever batching or mixing plant equipment is required to be operated automatically under the contract and a breakdown or malfunction of the automatic controls occurs, the equipment may be operated manually or by other methods for a period 48 hours following the breakdown or malfunction, provided this method of operations will produce results which conform to all other requirements of the contract.

50-08 AUTHORITY AND DUTIES OF INSPECTORS. Inspectors employed by the Owner shall be authorized to inspect all work done and all material furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the contract. Inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

Inspectors employed by the Owner are authorized to notify the Contractor or his/her 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 Engineer for his/her decision.

50-09 INSPECTION OF THE WORK. All materials and each part or detail of the work shall be subject to inspection by the Engineer. The Engineer 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 Engineer 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.

Any work done or materials used without supervision or inspection by an authorized representative of the Owner may be ordered removed and replaced at the Contractor's expense unless the Owner's representative failed to inspect after having been given reasonable notice in writing that the work was to be performed.

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 Engineer as provided in the subsection titled CONFORMITY WITH PLANS AND SPECIFICATIONS of this section.

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 the subsection titled CONTRACTOR'S RESPONSIBILITY FOR WORK of Section 70.

No removal work made under provision of this subsection shall be done without lines and grades having been given by the Engineer. Work done contrary to the instructions of the Engineer, work done beyond the lines shown on the plans or as given, 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 forthwith with any order of the Engineer made under the provisions of this subsection, the Engineer will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs (incurred by the Owner) from any monies due or to become due 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 shall be responsible for all damage done by his/her hauling equipment and shall correct such damage at his/her own expense.

50-12 MAINTENANCE DURING CONSTRUCTION. The Contractor shall maintain the work during construction and until the work is accepted. This 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 the subsection titled MAINTENANCE DURING CONSTRUCTION of this section, the Engineer 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 Engineer'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 deducted from monies due or to become due the Contractor.

50-14 PARTIAL ACCEPTANCE. If at any time during the prosecution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, he may request the Engineer to make final inspection of that unit. If the Engineer finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, he may accept it as being completed, 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 Engineer and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be completed in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The Engineer 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 Engineer will give the Contractor the necessary instructions for correction of same and the Contractor shall immediately comply with and execute such instructions. 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 Engineer 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 him for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, he shall notify the Engineer in writing of his/her intention to claim such additional compensation before he begins the work on which he bases the claim. If such notification is not given or the Engineer is not afforded proper opportunity by 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 Engineer 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 his/her written claim to the Engineer 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 COST REDUCTION INCENTIVE. The provisions of this subsection 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 Engineer, 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 cost reduction 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 cost reduction 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; and
- 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 cost reduction proposal not accepted by the Engineer, within the period specified in the proposal. The provisions of this subsection shall not be construed to require the Engineer to consider any cost reduction 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 cost reduction proposal has been issued. If a change order has not been issued by the date upon which the Contractor's cost reduction proposal specifies that a decision should be made, or such other date as the Contractor may subsequently have requested in writing, such cost reduction proposal shall be deemed rejected.

The Engineer shall be the sole judge of the acceptability of a cost reduction 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 Engineer may disregard the contract bid prices if, in the Engineer'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 cost reduction 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 cost reduction proposal from amounts payable to the Contractor under the contract.

If the Contractor's cost reduction 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 subsection. Such change order shall incorporate the changes in the plans and specifications which are necessary to permit the cost reduction proposal or such part of it as has been accepted and shall include any conditions upon which the Engineer's approval is based. The change order shall also set forth the estimated net savings attributable to the cost reduction 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 percent share of the net savings shall constitute full compensation to the Contractor for the cost reduction proposal and the performance of the work.

Acceptance of the cost-reduction proposal and performance of the cost-reduction 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 on 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 complete statements to the Engineer as to the origin, composition, and manufacture of all materials to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the Engineer's option, materials may be approved at the source of supply before delivery is stated. 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.

Contractor shall furnish airport lighting equipment that conforms to the requirements of cited materials specifications. In addition, where an FAA specification for airport lighting equipment is cited in the plans or specifications, the Contractor shall furnish such equipment that is:

- a. Listed in FAA Advisory Circular (AC) 150/5345-53, Airport Lighting Equipment Certification Program, that is in effect on the date of advertisement; and,
- b. Produced by FAA qualified manufacturer to produce such specified & listed equipment.

The airport lighting equipment required for this contract and to be furnished by the Contractor in accordance with the requirements of this subsection is contained in the Proposal and Technical sections of these specifications.

60-02 SAMPLES, TESTS, AND CITED SPECIFICATIONS. Unless otherwise designated, all materials used in the work shall be inspected, tested, and approved by the Engineer before incorporation in the work. Any work in which untested materials are used without approval or written permission of the Engineer 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 Engineer, shall be removed at the Contractor's expense. Unless otherwise designated, tests in accordance with the cited standard methods of ASTM, AASHTO, Federal Specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids, will be made by and at the expense of the Engineer. The testing organizations performing on site field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel, including the Contractor's representative at his/her request. Unless otherwise designated, samples will be taken by a qualified representative of Engineer. 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 his/her request.

The Contractor shall employ a testing organization to perform all Contractor required tests. He shall submit to the Engineer resumes on all testing organizations and individual persons who will be performing the tests. The Engineer will determine if such persons are qualified. All the test data shall be reported to the Engineer after the results are known. A legible, handwritten copy of all test

data shall be given to the Engineer 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 Engineer showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

60-03 CERTIFICATION OF COMPLIANCE. The Engineer may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's certificates of compliance 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.

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 Engineer.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "brand name," the Contractor shall be required to furnish 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;
- b. Suitability of the material or assembly for the use intended in the contract work.

Should the Contractor propose to furnish an "or equal" material or assembly, he shall furnish the manufacturer's certificates of compliance as hereinbefore described for the specified brand name material or assembly. However, the Engineer shall be the sole judge as to whether the proposed "or equal" is suitable for use in the work.

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

60-04 PLANT INSPECTION. The Engineer or his/her 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 his/her acceptance of the material or assembly.

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

- a. The Engineer shall have the cooperation and assistance of the Contractor and the producer with whom he has contracted for materials.
- b. The Engineer 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 Engineer, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Office or working space should be conveniently located 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 Engineer 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'S FIELD OFFICE. A field office is not required for this project.

60-06 STORAGE OF MATERIALS. Materials shall be so stored as 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 so as to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the Engineer. 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, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the Engineer. 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 Engineer 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 his/her entire 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 Engineer.

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 Engineer 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 herein (if any) to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified herein.

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. He 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 his/her 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 himself or his/her 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 prosecution 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, he shall provide for such use by suitable legal agreement with the patentee or owner. The Contractor and the surety shall indemnify and save 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 prosecution 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) is indicated as follows:

Refer to the Construction Plans or Contact the Engineer for Utility Contact Information.

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 Engineer.

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 so as 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 Engineer, 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 AID PARTICIPATION. For AIP contracts, the United States Government has agreed to reimburse the Owner for some portion of the contract costs. Such reimbursement is made from time to time upon the Owner's request to the FAA. In consideration of the United States Government's (FAA's) agreement with the Owner, the Owner has included provisions in this contract pursuant to the requirements of Title 49 of the United States Code (USC) and the Rules and Regulations of the FAA that pertain to the work.

As required by the USC, the contract work is subject to the inspection and approval of duly authorized representatives of the Administrator, FAA, and is further subject to those provisions of the rules and regulations that are cited in the contract, plans, or specifications.

No requirement of the USC, the rules and regulations implementing the USC, or this contract shall be construed as making the Federal Government 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 shall provide and maintain in a neat, sanitary condition such accommodations for the use of his/her employees as may be necessary to comply with the requirements of the state and local Board of Health, or of other bodies or tribunals having jurisdiction.

Attention is directed to Federal, state & local laws, rules and regulations concerning construction safety and health standards. Contractor shall not require any worker to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous to his/her health or safety.

70-07 PUBLIC CONVENIENCE AND SAFETY. The Contractor shall control his/her operations and those of his/her subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to his/her own operations and those of his/her subcontractors and all suppliers in accordance with the subsection titled MAINTENANCE OF TRAFFIC of Section 40 hereinbefore specified and shall limit such operations for the convenience and safety of the traveling public as specified in the subsection titled LIMITATION OF OPERATIONS of Section 80 hereinafter.

70-08 BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS. The Contractor shall furnish, erect, and maintain all barricades, warning signs, and markings for hazards necessary to protect the public and the work. When used during periods of darkness, such barricades, warning signs, and hazard markings shall be suitably illuminated. Unless otherwise specified, barricades, warning signs, and markings for hazards that are in the air operations area shall be a maximum of 18 inches high. Unless otherwise specified, barricades shall be spaced not more than 25 feet apart. Barricades, warning signs, and markings shall be paid for under M-101 Mobilization.

For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office).

When the work requires closing an air operations area of the airport or portion of such area, the Contractor shall furnish, erect, and maintain temporary markings and associated lighting conforming to the requirements of AC 150/5340-1, Standards for Airport Markings.

The Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stock piles, and his/her parked construction equipment that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the airport in reasonable conformance to AC 150/5370-2, Operational Safety on Airports During Construction.

The Contractor shall identify each motorized vehicle or piece of construction equipment in reasonable conformance to AC 150/5370-2.

The Contractor shall furnish and erect all barricades, warning signs, and markings for hazards prior to commencing work that requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their dismantling is directed by the Engineer.

Open-flame type lights shall not be permitted within the air operations areas of the airport unless specifically identified on the Contractor's Safety Plan and approved by the Engineer.

70-09 USE OF EXPLOSIVES. Blasting will not be permitted.

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 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 prosecution of the work, resulting from any act, omission, neglect, or misconduct in his/her manner or method of executing the work, or at any time due to defective work or materials, and said responsibility will not be released until the project shall have 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 nonexecution thereof by the Contractor, he shall restore, at his/her own 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 he shall make good such damage or injury in an acceptable manner.

70-11 RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify and save harmless the Engineer and the Owner and their officers, 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 his/her contract as may be considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, his/her surety may

be held until such suit(s), action(s), or claim(s) for injuries or damages as aforesaid 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 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 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. Should it be 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 shall be specified herein and indicated on the plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified. The Contractor shall make his/her own estimate of the difficulties involved in arranging his/her work to permit such beneficial occupancy by the Owner as described below:

Refer to the Construction Plans for Phasing of Work.

Upon completion of any portion of the work listed above, such portion shall be accepted by the Owner in accordance with the subsection titled PARTIAL ACCEPTANCE of Section 50.

No portion of the work may be opened by the Contractor for public use until ordered by the Engineer in writing. Should it become necessary to open a portion of the work to public traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the Engineer, 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 his/her expense.

Contractor shall make his/her 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.

Contractor shall be required to conform to safety standards contained AC 150/5370-2, Operational Safety on Airports During Construction (See Special Provisions.)

Contractor shall refer to the approved safety plan to identify barricade requirements and other safety requirements prior to opening up sections of work to traffic.

70-14 CONTRACTOR'S RESPONSIBILITY FOR WORK. Until the Engineer's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with the subsection titled PARTIAL ACCEPTANCE of Section 50, 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 his/her 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 his/her 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 the subsection titled RESTORATION OF SURFACES DISTURBED BY OTHERS of this section, 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 his/her 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 owners are indicated as follows:

Refer to the Construction Plans or Contact the Engineer for Utility Contact Information.

It is understood and agreed that the Owner does not guarantee 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 his/her responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that Contractor shall, upon execution of the contract, notify the owners of all utility services or other facilities of his/her plan of operations. Such notification shall be in writing addressed to THE PERSON TO CONTACT as provided hereinbefore in this subsection and the subsection titled RESTORATION OF SURFACES DISTURBED BY OTHERS of this section. A copy of each notification shall be given to the Engineer.

In addition to the general written notification hereinbefore provided, it shall be the responsibility of the Contractor to keep such individual owners advised of changes in his/her plan of operations that would affect such owners.

Prior to commencing the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such owner of his/her 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 Engineer.

The Contractor's failure to give the two day's notice hereinabove provided shall be cause for the Owner to suspend 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 excavation methods acceptable to the Engineer within 3 feet (90 cm) 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, he shall immediately notify the proper authority and the Engineer 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 Engineer 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 his/her operations whether or not 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 his/her 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 prosecution of the project work, shall comply with the following:

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.

The Contractor shall notify the above named FAA Airway Facilities Point-of-Contact 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.

If prosecution of the project work requires a facility outage, Contractor shall contact the above named FAA Point-of-Contact a minimum of 48 hours prior to the time of the required outage.

If prosecution of the project work results in damages to existing FAA equipment or cables, the Contractor shall repair the damaged item in conformance with FAA Airway Facilities' standards to the satisfaction of the above named FAA Point-of-Contact.

If the project work requires the cutting or splicing of FAA owned cables, the above named FAA Point-of-Contact shall be contacted a minimum of 48 hours prior to the time the cable work commences. The FAA reserves the right to have a FAA Airway Facilities 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 Airway Facilities' specifications and require approval by the above named FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is

hereby advised that FAA Airway Facilities restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA Airway Facilities, 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 to him by this contract, there shall be no liability upon the Engineer, his/her 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 his/her surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill his/her 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. He shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

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

Should the Contractor encounter, during his/her operations, any building, part of a building, structure, or object that is incongruous with its surroundings, he shall immediately cease operations in that location and notify the Engineer. The Engineer will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume his/her 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 modification (change order or supplemental agreement) as provided in the subsection titled EXTRA WORK of Section 40 and the subsection titled PAYMENT FOR EXTRA WORK AND FORCE ACCOUNT WORK of Section 90. If appropriate, the contract

modification shall include an extension of contract time in accordance with the subsection titled DETERMINATION AND EXTENSION OF CONTRACT TIME of Section 80.

END OF SECTION 70

**SECTION 80
PROSECUTION 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 Engineer.

Should the Contractor elect to assign his/her 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. In case of approval, the Contractor shall file copies of all subcontracts with the Engineer.

The Contractor shall perform, with his organization, an amount of work equal to at least 25 percent of the total contract cost.

80-02 NOTICE TO PROCEED. The notice to proceed shall state the date on which it is expected the Contractor will begin the construction and from which date contract time will be charged. The Contractor shall begin the work to be performed under the contract within 10 days of the date set by the Engineer in the written notice to proceed, but in any event, the Contractor shall notify the Engineer at least 24 hours in advance of the time actual construction operations will begin.

80-03 PROSECUTION AND PROGRESS. Unless otherwise specified, the Contractor shall submit his/her progress schedule for the Engineer's approval within 10 days after the effective date of the notice to proceed. The Contractor's progress schedule, when approved by the Engineer, may be used to establish major construction operations and to check on the progress of the work. 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 Engineer's request, submit a revised schedule for completion of the work within the contract time and modify his/her operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the prosecution of the work be discontinued for any reason, the Contractor shall notify the Engineer at least 24 hours in advance of resuming operations.

For AIP contracts, the Contractor shall not commence any actual construction prior to the date on which the notice to proceed is issued by the Owner.

80-04 LIMITATION OF OPERATIONS. The Contractor shall control his/her operations and the operations of his/her subcontractors and all suppliers so as to provide for the free and unobstructed movement of aircraft in the AIR OPERATIONS AREAS of the airport.

When the work requires the Contractor to conduct his/her operations within an AIR OPERATIONS AREA of the airport, the work shall be coordinated with airport operations (through the Engineer) at least 48 hours prior to commencement of such work. The Contractor shall not close an AIR OPERATIONS AREA until so authorized by the Engineer and until the necessary temporary

marking and associated lighting is in place as provided in the subsection titled BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS of Section 70.

When the contract work requires the Contractor to work within an AIR OPERATIONS AREA (AOA) of the airport on an intermittent basis (intermittent opening and closing of the AIR OPERATIONS AREA), the Contractor shall maintain constant communications as hereinafter specified; immediately obey all instructions to vacate the AIR OPERATIONS AREA; immediately obey all instructions to resume work in such AIR OPERATIONS AREA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AIR OPERATIONS AREA until the satisfactory conditions are provided. The following AIR OPERATIONS AREA 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:

Refer to the Construction Plans for Phasing of Work.

Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction (See Special Provisions).

80-04.1 OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION. All Contractors' operations shall be conducted in accordance with the project safety plan and the provisions set forth within the current version of Advisory Circular 150/5370-2. The safety plan included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a plan that details how it proposes to comply with the requirements presented within the safety plan.

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

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 safety plan and that they implement and maintain all necessary measures. No deviation or modifications may be made to the approved safety plan unless approved in writing by the Owner or Engineer.

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 and, in the opinion of the Engineer, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the Engineer, be removed forthwith by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the Engineer.

Should the Contractor fail to remove such persons or person, or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Engineer 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 be such that no injury to previously completed work, adjacent property, or existing airport facilities will result from its use.

When the means, 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 means, 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 means, methods, and equipment, such means, methods, and equipment shall be thoroughly reviewed by the Contractor, and if acceptable to the Contractor, such means, methods and equipment shall be used unless otherwise authorized by the Engineer. If the Contractor desires to use a method or type of equipment other than specified in the contract, he may request authority from the Engineer 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 Engineer 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 Engineer 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 subsection. Notwithstanding anything in this subsection the Contractor is solely responsible for the means, methods, and equipment required to successfully complete this project.

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 as he may deem necessary, due to unsuitable weather, or such other conditions as are considered unfavorable for the prosecution of the work, or for such time as is 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 Engineer's order to suspend work to the effective date of the Engineer's order to resume the work. Claims for such compensation shall be filed with the Engineer within the time period stated in the Engineer's order to resume work. The Contractor shall submit with his/her claim information substantiating the amount shown on the claim. The Engineer 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, for suspensions made at the request of the Owner, or for any other delay provided for in the contract, plans, or specifications.

If it should become 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. He 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 number of calendar or working days allowed for completion of the work shall be stated in the proposal and contract and shall be known as the CONTRACT TIME.

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

- a. CONTRACT TIME based on WORKING DAYS shall be calculated weekly by the Engineer. The Engineer will furnish the Contractor a copy of his/her weekly statement of the number of working days charged against the contract time during the week and the number of working days currently specified for completion of the contract (the original contract time plus the number of working days, if any, that have been included in approved CHANGE ORDERS or SUPPLEMENTAL AGREEMENTS covering EXTRA WORK).

The Engineer shall base his/her weekly statement of contract time charged on the following considerations:

- (1) No time shall be charged for days on which the Contractor is unable to proceed with the principal item of work under construction at the time for at least 6 hours with the normal work force employed on such principal item. Should the normal work force be on a double-shift, 12 hours shall be used. Should the normal work force be on a triple-shift, 18 hours shall apply. Conditions beyond Contractor's control such as strikes, lockouts, unusual delays in transportation, temporary suspension of the principal item of work under construction or temporary suspension of the entire work which have been ordered by Owner for reasons not the fault of the Contractor, shall not be charged against the contract time.
- (2) The Engineer will not make charges against the contract time prior to the effective date of the notice to proceed.
- (3) The Engineer will begin charges against the contract time on the first working day after the effective date of the notice to proceed.
- (4) Engineer will not make charges against the contract time after the date of final acceptance as defined in the subsection titled FINAL ACCEPTANCE of Section 50.
- (5) The Contractor will be allowed 1 week in which to file a written protest setting forth his/her objections to the Engineer's weekly statement. If no objection is filed within such specified time, the weekly statement shall be considered as acceptable to the Contractor.

The contract time (stated in the proposal) is based on the originally estimated quantities as described in the subsection titled INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES of Section 20. Should the satisfactory completion of the contract require performance of work in greater quantities than those estimated in the proposal, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in contract time shall not consider either the cost of work or the extension of contract time that has been covered by change order or supplemental agreement and shall be made at the time of final payment.

- b. CONTRACT TIME based on CALENDAR DAYS shall consist of the number of calendar days stated in the contract counting from the effective date of the notice to proceed and including all Saturdays, Sundays, holidays, and nonwork days. All calendar days elapsing between the effective dates of the Owner's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

- c. When the contract time is a specified completion date, it shall be the date on which all contract work shall be substantially completed.

If the Contractor finds it impossible for reasons beyond his/her control to complete the work within the contract time as specified, or as extended in accordance with the provisions of this subsection, he may, at any time prior to the expiration of the contract time as extended, make a written request to the Engineer for an extension of time setting forth the reasons which he believes will justify the granting of his/her request. Requests for extension of time on calendar day projects, caused by inclement weather, shall be supported with National Weather Bureau data showing the actual amount of inclement weather exceeded which could normally be expected during the contract period. The estimated amount of inclement weather days to be expected is listed below. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion in such amount as the conditions justify. 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 the subsection titled DETERMINATION AND EXTENSION OF CONTRACT TIME of this Section) the sum specified in the contract and proposal as liquidated damages will be deducted from any money due or to become due the Contractor or his/her 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 his/her contract.

Maximum construction time allowed for the entire project is 60 calendar days; liquidated damages of \$1,000 per calendar day will be assessed based on the total contract time.

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 Owner of any of its rights under the contract.

80-09 DEFAULT AND TERMINATION OF CONTRACT. The Contractor shall be considered in default of his/her 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 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 prosecution 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 him 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 Engineer consider the Contractor in default of the contract for any reason hereinbefore, he 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 Engineer 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 prosecution 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 Engineer 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 prosecution 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 Engineer.

Termination of the contract or a portion thereof shall neither relieve the Contractor of his/her responsibilities for the completed work nor shall it relieve his/her 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 Engineer 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 his/her work in such a manner as to insure safety and a minimum of hindrance to flight operations. All Contractor equipment and material stockpiles shall be stored a minimum of 250 feet from the centerline of an active runway. No equipment will be allowed to park within the approach area of an active runway at any time. No equipment shall be within 250 feet of an active runway at any time.

END OF SECTION 80

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SECTION 90 MEASUREMENT AND PAYMENT

90-01 MEASUREMENT OF QUANTITIES. All work completed under the contract will be measured by the Engineer, or his/her authorized representatives, using United States Customary Units of Measurement or the International System of Units.

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 meter) 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 Engineer.

Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.

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.

In computing volumes of excavation the average end area method or other acceptable methods will be used.

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 inches.

The term "ton" will mean the short ton consisting of 2,000 pounds (907 kilograms) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, approved scales by competent, qualified personnel at locations designed by the Engineer. 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 Engineer directs, and each truck shall bear a plainly legible identification mark.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer, 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.

When requested by the Contractor and approved by the Engineer 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 Engineer and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Bituminous materials will be measured by the gallon (liter) or ton (kilogram). When measured by volume, such volumes will be measured at 60 F (15 C) or will be corrected to the volume at 60 F (15 C) using ASTM D 1250 for asphalts or ASTM D 633 for tars.

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 bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work.

When bituminous materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, may be used for computing quantities.

Cement will be measured by the ton or hundredweight.

Timber will be measured by the thousand feet board measure (M.F.B.M.) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.

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.

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 by the Contractor in connection with force account work will be measured as agreed in the change order or supplemental agreement authorizing such force account work as provided in the subsection titled PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK of this section.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gage, 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.

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.

Scales shall be accurate within one-half percent of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the inspector 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 one-tenth of 1 percent of the nominal rated capacity of the scale, but not less than 1 pound (454 grams). The use of spring balances will not be permitted.

Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the inspector can safely and conveniently view them.

Scale installations shall have available ten standard 50-pound (2.3 kilogram) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.

Scales must be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.

Scales "over-weighing" (indicating more than correct weight) will not be permitted to operate, and all materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of one-half of 1 percent.

In the event inspection reveals the scales have been "under-weighing" (indicating less than correct weight), they shall be adjusted, and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.

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.

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 Engineer. 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.

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 prosecution thereof, subject to the provisions of the subsection titled NO WAIVER OF LEGAL RIGHTS of Section 70.

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 subsection titled ALTERATION OF WORK AND QUANTITIES of Section 40 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 his/her unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 PAYMENT FOR OMITTED ITEMS. As specified in the subsection titled OMITTED ITEMS of Section 40, the Engineer 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 Engineer 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 Engineer's order to omit or nonperform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the Engineer'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 Engineer'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 AND FORCE ACCOUNT WORK. Extra work, performed in accordance with the subsection titled EXTRA WORK of Section 40, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work. When the change order or supplemental agreement authorizing the extra work requires that it be done by force account, such force account shall be measured and paid for based on expended labor, equipment, and materials plus a negotiated and agreed upon allowance for overhead and profit.

- a. Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.
- b. Comparison of Record. The Contractor and the Engineer shall compare records of the cost of force account work at the end of each day. Agreement shall be indicated by signature of the Contractor and the Engineer or their duly authorized representatives.
- c. Statement. No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with duplicate itemized statements of the cost of such force account work detailed as follows:
 - (1) Name, classification, date, daily hours, total hours, rate and extension for each laborer and foreman.
 - (2) Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
 - (3) Quantities of materials, prices, and extensions.
 - (4) Transportation of materials.
 - (5) Cost of property damage, liability and workman's compensation insurance premiums, unemployment insurance contributions, and social security tax.

Statements shall be accompanied and supported by a receipted invoice for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock,

that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

90-06 PARTIAL PAYMENTS. Partial payments will be made at least once each month as the work progresses. Said payments will be based upon estimates prepared by the Engineer of the value of the work performed and materials complete 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 the subsection titled PAYMENT FOR MATERIALS ON HAND of this section.

No partial payment will be made when the amount due the Contractor since the last estimate amounts to less than five hundred dollars (\$500).

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 until the final payment is made, except as may be provided (at the Contractor's option) in the subsection titled PAYMENT OF WITHHELD FUNDS of this section. The balance (90 percent) of the amount payable, less all previous payments, shall be certified for payment. Should the Contractor exercise his/her option, as provided in the subsection titled PAYMENT OF WITHHELD FUNDS of this section, no such 10 percent retainage shall be deducted.

When not less than 95 percent of the work has been completed, the Engineer may, at the Owner's discretion and with the consent of the surety, prepare an estimate from which will be retained 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 Engineer to be a part of the final quantity for the item of work in question and a written Change Order or Supplemental agreement has been executed specifically for that work.

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 the subsection titled ACCEPTANCE AND FINAL PAYMENT of this section.

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 retained percentage or 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 Engineer at or on an approved site.
- b. The Contractor has furnished the Engineer with acceptable evidence of the quantity and quality of such stored or stockpiled materials.
- c. The Contractor has furnished the Engineer 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 so stored or stockpiled.
- e. The Contractor has furnished the Owner evidence that the material so stored or stockpiled is insured against loss by damage to or disappearance of such materials at anytime 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 his/her 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 subsection.

90-08 PAYMENT OF WITHHELD FUNDS. At the Contractor's option, he/she may request that the Owner accept (in lieu of the 10 percent retainage on partial payments described in the subsection titled PARTIAL PAYMENTS of this section) the Contractor's deposits in escrow under 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 10 percent 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 the subsection titled FINAL ACCEPTANCE of Section 50, the Engineer will prepare final estimate of the items of work actually performed. Contractor shall approve the Engineer's final estimate or advise the Engineer of his/her 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 Engineer 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 Engineer's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the Engineer'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 the subsection titled CLAIMS FOR ADJUSTMENT AND DISPUTES of Section 50.

After the Contractor has approved, or approved under protest, the Engineer's final estimate, 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 the subsection titled CLAIMS FOR ADJUSTMENTS AND DISPUTES of Section 50 or under the provisions of this subsection, 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.

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SECTION 100
CONTRACTOR QUALITY CONTROL PROGRAM

100-01 GENERAL. When the specification requires a Contractor Quality Control Program, the Contractor shall establish, provide, and maintain an effective Quality Control Program 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 herein and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

Intent of this section is to enable Contractor to establish a necessary level of control that will:

- a. Adequately provide for the production of acceptable quality materials.
- b. Provide sufficient information to assure both the Contractor and the Engineer that the specification requirements can be met.
- c. Allow Contractor as much latitude as possible to develop his own standard of control.

The Contractor shall be prepared to discuss and present, at the preconstruction conference, his/her understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Quality Control Program has been reviewed by the Engineer. No partial payment will be made for materials subject to specific quality control requirements until the Quality Control Program has been reviewed.

The quality control requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the acceptance testing requirements. Acceptance testing requirements are the responsibility of the Engineer.

100-02 DESCRIPTION OF PROGRAM.

a. **General Description.** The Contractor shall establish a Quality Control Program to perform inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. This Quality Control Program shall ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Program 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 quality control.

b. **Quality Control Program.** The Contractor shall describe the Quality Control Program in a written document that shall be reviewed by the Engineer prior to the start of any production, construction, or off-site fabrication. The written Quality Control Program shall be submitted to the Engineer for review at least 10 calendar days before the date of the preconstruction conference.

The Quality Control Program shall be organized to address, as a minimum, the following items:

- a. Quality control organization;
- b. Project progress schedule;
- c. Submittals schedule;
- d. Inspection requirements;
- e. Quality control testing plan;
- f. Documentation of quality control activities; and
- g. Requirements for corrective action when quality control and/or acceptance criteria are not met.

The Contractor is encouraged to add any additional elements to the Quality Control Program that he/she deems necessary to adequately control all production and/or construction processes required by this contract.

100-03 QUALITY CONTROL ORGANIZATION. The Contractor Quality Control Program shall be implemented by the establishment of a separate quality control organization. An organizational chart shall be developed to show all quality control personnel and how these personnel integrate with other management/production and construction functions and personnel.

The organization chart shall identify all quality control staff by name and function, and shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work. If necessary, different technicians can be utilized 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 Quality Control Program, the personnel assigned shall be subject to the qualification requirements of paragraph 100-03a and 100-03b. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The quality control organization shall consist of the following minimum personnel:

- a. Program Administrator. The Program Administrator shall be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The Program Administrator shall have a minimum of 5 years of experience in airport and/or highway construction and shall have had prior quality control experience on a project of comparable size and scope as the contract.
- b. Additional qualifications for the Program Administrator shall include at least 1 of the following requirements:
 - (1) Professional engineer with 1 year of airport paving experience acceptable to the Engineer.

- (2) Engineer-in-training with 2 years of airport paving experience acceptable to the Engineer.
- (3) An individual with 3 years of highway and/or airport paving experience acceptable to the Engineer, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.
- (4) Construction materials technician certified at Level III by the National Institute for Certification in Engineering Technologies (NICET).
- (5) Highway materials technician certified at Level III by NICET.
- (6) Highway construction technician certified at Level III by NICET.
- (7) A NICET certified engineering technician in Civil Engineering Technology with 5 years of highway and/or airport paving experience acceptable to the Engineer.

The Program Administrator shall have full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the contract plans and technical specifications. The Program Administrator shall report directly to a responsible officer of the construction firm. The Program Administrator may supervise the Quality Control Program on more than one project provided that person can be at the job site within 2 hours after being notified of a problem.

- c. Quality Control Technicians. A sufficient number of quality control technicians necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be either engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II or higher construction materials technician or highway construction technician and shall have a minimum of 2 years of experience in their area of expertise.
- d. The quality control technicians shall report directly to the Program Administrator 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 Section 100-06.
 - (2) Performance of all quality control tests as required by the technical specifications and Section 100-07.
- e. Certification at an equivalent level, by a state or nationally recognized organization will be acceptable in lieu of NICET certification.
- f. Staffing Levels. Contractor shall provide sufficient qualified quality control 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. Scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The Quality Control Program shall state where different technicians will be required for different work elements.

100-04 PROJECT PROGRESS SCHEDULE. The Contractor shall submit a coordinated construction schedule for all work activities. The schedule shall be prepared as a network diagram in Critical Path Method (CPM), PERT, or other format, or as otherwise specified in the contract. As a minimum, it shall provide information on the sequence of work activities, milestone dates, and activity duration.

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

100-05 SUBMITTALS SCHEDULE. The Contractor shall submit a detailed listing of all submittals (e.g., mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include:

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

100-06 INSPECTION REQUIREMENTS. Quality control 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 Section 100-07.

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

- b. During plant operation for material production, quality control test results and periodic inspections shall be utilized 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 utilized in proportioning and mixing shall be inspected to ensure its proper operating condition. The Quality Control Program shall detail how these and other quality control functions will be accomplished and utilized.
- c. During field operations, quality control test results and periodic inspections shall be utilized to ensure the quality of all materials and workmanship. All equipment utilized 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 Program shall document how these and other quality control functions will be accomplished and utilized.

100-07 QUALITY CONTROL TESTING PLAN. As a part of the overall Quality Control Program, the Contractor shall implement a quality control 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 quality control tests that the Contractor deems necessary to adequately control production and/or construction processes.

The 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., Plant Mix Bituminous Pavements);
- c. Test type (e.g., gradation, grade, asphalt content);
- d. Test standard (e.g., ASTM or 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); and
- g. Control requirements (e.g., target, permissible deviations).

The testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples in accordance with ASTM D 3665. The Engineer shall be provided the opportunity to witness quality control sampling and testing.

All quality control test results shall be documented by the Contractor as required by Section 100-08.

100-08 DOCUMENTATION. The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required 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 Engineer daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the Contractor's Program Administrator.

Specific Contractor quality control records required for the contract shall include, but are not necessarily limited to, the following records:

- a. Daily Inspection Reports. Each Contractor quality control technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations on a form acceptable to the Engineer. These technician's daily reports shall provide factual evidence that continuous quality control 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) Review of quality control tests; and
 - (7) Safety inspection.

The daily inspection reports shall identify inspections 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 quality control technician and the Program Administrator. The Engineer shall be provided at least one copy of each daily inspection report on the work day following the day of record.

b. Daily Test Reports. The Contractor shall be responsible for establishing a system that will record all quality control 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; and
- (9) Retests.

Test results from each day's work period shall be submitted to the Engineer prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical quality control charts. The daily test reports shall be signed by the responsible quality control technician and the Program Administrator.

100-09 CORRECTIVE ACTION REQUIREMENTS. The Quality Control Program 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 Quality Control Program as a whole, and for individual items of work contained in the technical specifications.

The Quality Control Program shall detail how the results of quality control inspections and tests will be used for determining the need for corrective action and shall contain clear sets of 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 utilize statistical quality control charts for individual quality control tests. The requirements for corrective action shall be linked to the control charts.

100-10 SURVEILLANCE BY THE ENGINEER. All items of material and equipment shall be subject to surveillance by the Engineer at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate quality control system in conformance with the requirements detailed herein and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to surveillance by the Engineer at the site for the same purpose.

Surveillance by the Engineer does not relieve the Contractor of performing quality control inspections of either on-site or off-site Contractor's or subcontractor's work.

100-11 NONCOMPLIANCE.

- a. The Engineer will notify the Contractor of any noncompliance with any of the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the Engineer or his/her authorized representative to the Contractor or his/her authorized representative at the site of the work, shall be considered sufficient notice.
- b. In cases where quality control activities do not comply with either the Contractor Quality Control Program or the contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, as determined by the Engineer, the Engineer may:
 - (1) Order the Contractor to replace ineffective or unqualified quality control personnel or subcontractors.
 - (2) Order the Contractor to stop operations until appropriate corrective actions are taken.

END OF SECTION 100

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SECTION 105 MOBILIZATION

105-1 Description. This item shall consist of work and operations, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-1.1 Posted notices. Prior to commencement of construction activities the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

105-2 Basis of measurement and payment. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

- a. With first pay request, 25%.
- 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 40%.
- d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by 90-11, the final 10%.

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SECTION 110
METHOD OF ESTIMATING PERCENTAGE OF MATERIAL
WITHIN SPECIFICATION LIMITS (PWL)

110-01 GENERAL. When the specifications provide for acceptance of material based on the method of estimating percentage of material within specification limits (PWL), the PWL will be determined in accordance with this section. All test results for a lot will be analyzed statistically to determine the total estimated percent of the lot that is within specification limits. The PWL is computed using the sample average (X) and sample standard deviation (S_n) of the specified number (n) of sublots for the lot and the specification tolerance limits, L for lower and U for upper, for the particular acceptance parameter. From these values, the respective Quality index(s), Q_L for Lower Quality Index and/or Q_U for Upper Quality Index, is computed and the PWL for the lot for the specified n is determined from Table 1. All specification limits specified in the technical sections shall be absolute values. Test results used in the calculations shall be to the significant figure given in the test procedure.

There is some degree of uncertainty (risk) in the measurement for acceptance because only a small fraction of production material (the population) is sampled and tested. This uncertainty exists because all portions of the production material have the same probability to be randomly sampled. The Contractor's risk is the probability that material produced at the acceptable quality level is rejected or subjected to a pay adjustment. The Owner's risk is the probability that material produced at the rejectable quality level is accepted.

IT IS THE INTENT OF THIS SECTION TO INFORM THE CONTRACTOR THAT, IN ORDER TO CONSISTENTLY OFFSET THE CONTRACTOR'S RISK FOR MATERIAL EVALUATED, PRODUCTION QUALITY (USING POPULATION AVERAGE AND POPULATION STANDARD DEVIATION) MUST BE MAINTAINED AT THE ACCEPTABLE QUALITY SPECIFIED OR HIGHER. IN ALL CASES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PRODUCE AT QUALITY LEVELS THAT WILL MEET THE SPECIFIED ACCEPTANCE CRITERIA WHEN SAMPLED AND TESTED AT THE FREQUENCIES SPECIFIED.

110-02 METHOD FOR COMPUTING PWL. The computational sequence for computing PWL is as follows:

- a. Divide the lot into n sublots in accordance with the acceptance requirements of the specification.
- b. Locate the random sampling position within the subplot in accordance with the requirements of the specification.
- c. Make a measurement at each location, or take a test portion and make the measurement on the test portion in accordance with the testing requirements of the specification.
- d. Find the sample average (X) for all subplot values within the lot by using the following formula:

$$X = (x_1 + x_2 + x_3 + \dots + x_n) / n$$

Where: X = Sample average of all subplot values within a lot
x₁, x₂ = Individual subplot values
n = Number of sublots

- e. Find the sample standard deviation (S_n) by use of the following formula:

$$S_n = [(d_1^2 + d_2^2 + d_3^2 + \dots + d_n^2)/(n-1)]^{1/2}$$

Where: S_n = Sample standard deviation of the number of subplot values in the set
 $d_1, d_2,$ = Deviations of the individual subplot values $x_1, x_2,$ from the average value X
that is: $d_1 = (x_1 - X), d_2 = (x_2 - X) \dots d_n = (x_n - X)$
 n = Number of sublots

- f. For single sided specification limits (i.e., L only), compute the Lower Quality Index Q_L by use of the following formula:

$$Q_L = (X - L) / S_n$$

Where: L = specification lower tolerance limit

Estimate the percentage of material within limits (PWL) by entering Table 1 with Q_L , using the column appropriate to the total number (n) of measurements. If the value of Q_L falls between values shown on the table, use the next higher value of PWL.

- g. For double-sided specification limits (i.e. L and U), compute the Quality Indexes Q_L and Q_U by use of the following formulas:

$$Q_L = (X - L) / S_n \text{ and } Q_U = (U - X) / S_n$$

Where: L and U = specification lower and upper tolerance limits

Estimate the percentage of material between the lower (L) and upper (U) tolerance limits (PWL) by entering Table 1 separately with Q_L and Q_U , using the column appropriate to the total number (n) of measurements, and determining the percent of material above P_L and percent of material below P_U for each tolerance limit. If the values of Q_L fall between values shown on the table, use the next higher value of P_L or P_U . Determine the PWL by use of the following formula:

$$PWL = (P_U + P_L) - 100$$

Where: P_L = percent within lower specification limit
 P_U = percent within upper specification limit

EXAMPLE OF PWL CALCULATION

Project: Example Project
Test Item: Item P-401, Lot A.

A. PWL Determination for Mat Density.

1. Density of four random cores taken from Lot A.

A-1 96.60
A-2 97.55
A-3 99.30
A-4 98.35

$$n = 4$$

2. Calculate average density for the lot.

$$X = (x_1 + x_2 + x_3 + \dots + x_n) / n$$
$$X = (96.60 + 97.55 + 99.30 + 98.35) / 4$$
$$X = 97.95 \text{ percent density}$$

3. Calculate the standard deviation for the lot.

$$S_n = [((96.60 - 97.95)^2 + (97.55 - 97.95)^2 + (99.30 - 97.95)^2 + (98.35 - 97.95)^2) / (4 - 1)]^{1/2}$$
$$S_n = [(1.82 + 0.16 + 1.82 + 0.16) / 3]^{1/2}$$
$$S_n = 1.15$$

4. Calculate the Lower Quality Index Q_L for the lot. ($L = 96.3$)

$$Q_L = (X - L) / S_n$$
$$Q_L = (97.95 - 96.30) / 1.15$$
$$Q_L = 1.4348$$

5. Determine PWL by entering Table 1 with $Q_L = 1.44$ and $n = 4$.

$$PWL = 98$$

B. PWL Determination for Air Voids.

1. Air Voids of four random samples taken from Lot A.

$$\begin{array}{ll} \text{A-1} & 5.00 \\ \text{A-2} & 3.74 \\ \text{A-3} & 2.30 \\ \text{A-4} & 3.25 \end{array}$$

2. Calculate the average air voids for the lot.

$$X = (x_1 + x_2 + x_3 + \dots + x_n) / n$$
$$X = (5.00 + 3.74 + 2.30 + 3.25) / 4$$
$$X = 3.57 \text{ percent}$$

3. Calculate the standard deviation S_n for the lot.

$$S_n = [((3.57 - 5.00)^2 + (3.57 - 3.74)^2 + (3.57 - 2.30)^2 + (3.57 - 3.25)^2) / (4 - 1)]^{1/2}$$
$$S_n = [(2.04 + 0.03 + 1.62 + 0.10) / 3]^{1/2}$$
$$S_n = 1.12$$

4. Calculate the Lower Quality Index Q_L for the lot. ($L = 2.0$)

$$Q_L = (X - L) / S_n$$

$$Q_L = (3.57 - 2.00) / 1.12$$

$$Q_L = 1.3992$$

5. Determine P_L by entering Table 1 with $Q_L = 1.41$ and $n = 4$.

$$P_L = 97$$

6. Calculate the Upper Quality Index Q_U for the lot. ($U = 5.0$)

$$Q_U = (U - X) / S_n$$

$$Q_U = (5.00 - 3.57) / 1.12$$

$$Q_U = 1.2702$$

7. Determine P_U by entering Table 1 with $Q_U = 1.29$ and $n = 4$.

$$P_U = 93$$

8. Calculate Air Voids PWL

$$PWL = (P_L + P_U) - 100$$

$$PWL = (97 + 93) - 100 = 90$$

EXAMPLE OF OUTLIER CALCULATION (Reference ASTM E 178)

Project: Example Project

Test Item: Item P-401, Lot A.

A. Outlier Determination for Mat Density.

1. Density of four random cores taken from Lot A. arranged in descending order.

A-3 99.30

A-4 98.35

A-2 97.55

A-1 96.60

2. Use $n=4$ and upper 5 percent significance level of to find the critical value for test criterion = 1.463.

3. Use average density, standard deviation, and test criterion value to evaluate density measurements.

- a. For measurements greater than the average:

If: $(\text{measurement} - \text{average}) / (\text{standard deviation})$ is less than test criterion,

Then: the measurement is not considered an outlier

for A-3 Check if $(99.30 - 97.95) / 1.15$ greater than 1.463
 1.174 is less than 1.463, the value is not an outlier

- b. For measurements less than the average:
 If $(\text{average} - \text{measurement}) / (\text{standard deviation})$ is less than test criterion,
 the measurement is not considered an outlier

for A-1 Check if $(97.95 - 96.60) / 1.15$ greater than 1.463
 1.0 is less than 1.463, the value is not an outlier

NOTE: In this example, a measurement would be considered an outlier if the density was:
 greater than $(97.95 + 1.463 \times 1.15) = 99.63$ percent or,
 less than $(97.95 - 1.463 \times 1.15) = 96.27$ percent

TABLE 1. TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)

Percent Within Limits (P _L and P _U)	Positive Values of Q (Q _L and Q _U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
99	1.1541	1.4700	1.6714	1.8008	1.8888	1.9520	1.9994	2.0362
98	1.1524	1.4400	1.6016	1.6982	1.7612	1.8053	1.8379	1.8630
97	1.1496	1.4100	1.5427	1.6181	1.6661	1.6993	1.7235	1.7420
96	1.1456	1.3800	1.4897	1.5497	1.5871	1.6127	1.6313	1.6454
95	1.1405	1.3500	1.4407	1.4887	1.5181	1.5381	1.5525	1.5635
94	1.1342	1.3200	1.3946	1.4329	1.4561	1.4717	1.4829	1.4914
93	1.1269	1.2900	1.3508	1.3810	1.3991	1.4112	1.4199	1.4265
92	1.1184	1.2600	1.3088	1.3323	1.3461	1.3554	1.3620	1.3670
91	1.1089	1.2300	1.2683	1.2860	1.2964	1.3032	1.3081	1.3118
90	1.0982	1.2000	1.2290	1.2419	1.2492	1.2541	1.2576	1.2602
89	1.0864	1.1700	1.1909	1.1995	1.2043	1.2075	1.2098	1.2115
88	1.0736	1.1400	1.1537	1.1587	1.1613	1.1630	1.1643	1.1653
87	1.0597	1.1100	1.1173	1.1192	1.1199	1.1204	1.1208	1.1212
86	1.0448	1.0800	1.0817	1.0808	1.0800	1.0794	1.0791	1.0789
85	1.0288	1.0500	1.0467	1.0435	1.0413	1.0399	1.0389	1.0382
84	1.0119	1.0200	1.0124	1.0071	1.0037	1.0015	1.0000	0.9990
83	0.9939	0.9900	0.9785	0.9715	0.9671	0.9643	0.9624	0.9610
82	0.9749	0.9600	0.9452	0.9367	0.9315	0.9281	0.9258	0.9241
81	0.9550	0.9300	0.9123	0.9025	0.8966	0.8928	0.8901	0.8882
80	0.9342	0.9000	0.8799	0.8690	0.8625	0.8583	0.8554	0.8533
79	0.9124	0.8700	0.8478	0.8360	0.8291	0.8245	0.8214	0.8192
78	0.8897	0.8400	0.8160	0.8036	0.7962	0.7915	0.7882	0.7858
77	0.8662	0.8100	0.7846	0.7716	0.7640	0.7590	0.7556	0.7531
76	0.8417	0.7800	0.7535	0.7401	0.7322	0.7271	0.7236	0.7211
75	0.8165	0.7500	0.7226	0.7089	0.7009	0.6958	0.6922	0.6896
74	0.7904	0.7200	0.6921	0.6781	0.6701	0.6649	0.6613	0.6587
73	0.7636	0.6900	0.6617	0.6477	0.6396	0.6344	0.6308	0.6282
72	0.7360	0.6600	0.6316	0.6176	0.6095	0.6044	0.6008	0.5982
71	0.7077	0.6300	0.6016	0.5878	0.5798	0.5747	0.5712	0.5686
70	0.6787	0.6000	0.5719	0.5582	0.5504	0.5454	0.5419	0.5394
69	0.6490	0.5700	0.5423	0.5290	0.5213	0.5164	0.5130	0.5105
68	0.6187	0.5400	0.5129	0.4999	0.4924	0.4877	0.4844	0.4820
67	0.5878	0.5100	0.4836	0.4710	0.4638	0.4592	0.4560	0.4537
66	0.5563	0.4800	0.4545	0.4424	0.4355	0.4310	0.4280	0.4257

65	0.5242	0.4500	0.4255	0.4139	0.4073	0.4030	0.4001	0.3980
64	0.4916	0.4200	0.3967	0.3856	0.3793	0.3753	0.3725	0.3705
63	0.4586	0.3900	0.3679	0.3575	0.3515	0.3477	0.3451	0.3432
62	0.4251	0.3600	0.3392	0.3295	0.3239	0.3203	0.3179	0.3161
61	0.3911	0.3300	0.3107	0.3016	0.2964	0.2931	0.2908	0.2892
60	0.3568	0.3000	0.2822	0.2738	0.2691	0.2660	0.2639	0.2624
59	0.3222	0.2700	0.2537	0.2461	0.2418	0.2391	0.2372	0.2358
58	0.2872	0.2400	0.2254	0.2186	0.2147	0.2122	0.2105	0.2093
57	0.2519	0.2100	0.1971	0.1911	0.1877	0.1855	0.1840	0.1829
56	0.2164	0.1800	0.1688	0.1636	0.1607	0.1588	0.1575	0.1566
55	0.1806	0.1500	0.1406	0.1363	0.1338	0.1322	0.1312	0.1304
54	0.1447	0.1200	0.1125	0.1090	0.1070	0.1057	0.1049	0.1042
53	0.1087	0.0900	0.0843	0.0817	0.0802	0.0793	0.0786	0.0781
52	0.0725	0.0600	0.0562	0.0544	0.0534	0.0528	0.0524	0.0521
51	0.0363	0.0300	0.0281	0.0272	0.0267	0.0264	0.0262	0.0260
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 1. TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)

Percent Within Limits (P _L and P _U)	Negative Values of Q (Q _L and Q _U)							
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10
49	-	-	-	-	-	-	-	-
	0.0363	0.0300	0.0281	0.0272	0.0267	0.0264	0.0262	0.0260
48	-	-	-	-	-	-	-	-
	0.0725	0.0600	0.0562	0.0544	0.0534	0.0528	0.0524	0.0521
47	-	-	-	-	-	-	-	-
	0.1087	0.0900	0.0843	0.0817	0.0802	0.0793	0.0786	0.0781
46	-	-	-	-	-	-	-	-
	0.1447	0.1200	0.1125	0.1090	0.1070	0.1057	0.1049	0.1042
45	-	-	-	-	-	-	-	-
	0.1806	0.1500	0.1406	0.1363	0.1338	0.1322	0.1312	0.1304
44	-	-	-	-	-	-	-	-
	0.2164	0.1800	0.1688	0.1636	0.1607	0.1588	0.1575	0.1566
43	-	-	-	-	-	-	-	-
	0.2519	0.2100	0.1971	0.1911	0.1877	0.1855	0.1840	0.1829
42	-	-	-	-	-	-	-	-
	0.2872	0.2400	0.2254	0.2186	0.2147	0.2122	0.2105	0.2093
41	-	-	-	-	-	-	-	-
	0.3222	0.2700	0.2537	0.2461	0.2418	0.2391	0.2372	0.2358
40	-	-	-	-	-	-	-	-
	0.3568	0.3000	0.2822	0.2738	0.2691	0.2660	0.2639	0.2624
39	-	-	-	-	-	-	-	-
	0.3911	0.3300	0.3107	0.3016	0.2964	0.2931	0.2908	0.2892
38	-	-	-	-	-	-	-	-
	0.4251	0.3600	0.3392	0.3295	0.3239	0.3203	0.3179	0.3161
37	-	-	-	-	-	-	-	-
	0.4586	0.3900	0.3679	0.3575	0.3515	0.3477	0.3451	0.3432
36	-	-	-	-	-	-	-	-
	0.4916	0.4200	0.3967	0.3856	0.3793	0.3753	0.3725	0.3705
35	-	-	-	-	-	-	-	-
	0.5242	0.4500	0.4255	0.4139	0.4073	0.4030	0.4001	0.3980
34	-	-	-	-	-	-	-	-
	0.5563	0.4800	0.4545	0.4424	0.4355	0.4310	0.4280	0.4257
33	-	-	-	-	-	-	-	-
	0.5878	0.5100	0.4836	0.4710	0.4638	0.4592	0.4560	0.4537

32	-	-	-	-	-	-	-	-
	0.6187	0.5400	0.5129	0.4999	0.4924	0.4877	0.4844	0.4820
31	-	-	-	-	-	-	-	-
	0.6490	0.5700	0.5423	0.5290	0.5213	0.5164	0.5130	0.5105
30	-	-	-	-	-	-	-	-
	0.6787	0.6000	0.5719	0.5582	0.5504	0.5454	0.5419	0.5394
29	-	-	-	-	-	-	-	-
	0.7077	0.6300	0.6016	0.5878	0.5798	0.5747	0.5712	0.5686
28	-	-	-	-	-	-	-	-
	0.7360	0.6600	0.6316	0.6176	0.6095	0.6044	0.6008	0.5982
27	-	-	-	-	-	-	-	-
	0.7636	0.6900	0.6617	0.6477	0.6396	0.6344	0.6308	0.6282
26	-	-	-	-	-	-	-	-
	0.7904	0.7200	0.6921	0.6781	0.6701	0.6649	0.6613	0.6587
25	-	-	-	-	-	-	-	-
	0.8165	0.7500	0.7226	0.7089	0.7009	0.6958	0.6922	0.6896
24	-	-	-	-	-	-	-	-
	0.8417	0.7800	0.7535	0.7401	0.7322	0.7271	0.7236	0.7211
23	-	-	-	-	-	-	-	-
	0.8662	0.8100	0.7846	0.7716	0.7640	0.7590	0.7556	0.7531
22	-	-	-	-	-	-	-	-
	0.8897	0.8400	0.8160	0.8036	0.7962	0.7915	0.7882	0.7858
21	-	-	-	-	-	-	-	-
	0.9124	0.8700	0.8478	0.8360	0.8291	0.8245	0.8214	0.8192
20	-	-	-	-	-	-	-	-
	0.9342	0.9000	0.8799	0.8690	0.8625	0.8583	0.8554	0.8533
19	-	-	-	-	-	-	-	-
	0.9550	0.9300	0.9123	0.9025	0.8966	0.8928	0.8901	0.8882
18	-	-	-	-	-	-	-	-
	0.9749	0.9600	0.9452	0.9367	0.9315	0.9281	0.9258	0.9241
17	-	-	-	-	-	-	-	-
	0.9939	0.9900	0.9785	0.9715	0.9671	0.9643	0.9624	0.9610
16	-	-	-	-	-	-	-	-
	1.0119	1.0200	1.0124	1.0071	1.0037	1.0015	1.0000	0.9990
15	-	-	-	-	-	-	-	-
	1.0288	1.0500	1.0467	1.0435	1.0413	1.0399	1.0389	1.0382
14	-	-	-	-	-	-	-	-
	1.0448	1.0800	1.0817	1.0808	1.0800	1.0794	1.0791	1.0789
13	-	-	-	-	-	-	-	-
	1.0597	1.1100	1.1173	1.1192	1.1199	1.1204	1.1208	1.1212
12	-	-	-	-	-	-	-	-
	1.0736	1.1400	1.1537	1.1587	1.1613	1.1630	1.1643	1.1653
11	-	-	-	-	-	-	-	-
	1.0864	1.1700	1.1909	1.1995	1.2043	1.2075	1.2098	1.2115
10	-	-	-	-	-	-	-	-
	1.0982	1.2000	1.2290	1.2419	1.2492	1.2541	1.2576	1.2602
9	-	-	-	-	-	-	-	-
	1.1089	1.2300	1.2683	1.2860	1.2964	1.3032	1.3081	1.3118
8	-	-	-	-	-	-	-	-
	1.1184	1.2600	1.3088	1.3323	1.3461	1.3554	1.3620	1.3670
7	-	-	-	-	-	-	-	-
	1.1269	1.2900	1.3508	1.3810	1.3991	1.4112	1.4199	1.4265
6	-	-	-	-	-	-	-	-
	1.1342	1.3200	1.3946	1.4329	1.4561	1.4717	1.4829	1.4914

5	-	-	-	-	-	-	-	-
	1.1405	1.3500	1.4407	1.4887	1.5181	1.5381	1.5525	1.5635
4	-	-	-	-	-	-	-	-
	1.1456	1.3800	1.4897	1.5497	1.5871	1.6127	1.6313	1.6454
3	-	-	-	-	-	-	-	-
	1.1496	1.4100	1.5427	1.6181	1.6661	1.6993	1.7235	1.7420
2	-	-	-	-	-	-	-	-
	1.1524	1.4400	1.6016	1.6982	1.7612	1.8053	1.8379	1.8630
1	-	-	-	-	-	-	-	-
	1.1541	1.4700	1.6714	1.8008	1.8888	1.9520	1.9994	2.0362

END OF SECTION 110

DIVISION III

SPECIAL PROVISIONS

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SPECIAL PROVISIONS

1. GENERAL

1.1 These Special Provisions are supplemental to the General Provisions and shall be considered as a part of specification & Contract. In case of conflict between stipulations of the Special Provisions and the specifications or plans, the Special Provisions shall take precedence and govern. The Engineer shall make interpretations of the plans and specifications.

SEQUENCE OF CONSTRUCTION

Work is scheduled to begin in the Summer 2016. During this time, the airfield will remain open to aircraft traffic. The Contractor may be required to remove personnel and equipment from the areas adjacent to the runway during times of arriving and departing aircraft.

2. PRELIMINARY MATTERS

2.1 The Contractor shall submit to the Engineer all shop drawings required for the work. ***All shop drawings shall be carefully reviewed for accuracy and conformance by the Contractor; clearly indicate the products and materials being submitted for review; and shall bear the Contractor's stamp of approval before being forwarded to the Engineer.*** Shop drawings shall be submitted in such time as to cause no delay to the work or any part thereof. The Engineer shall review the shop drawings with reasonable promptness, noting desired corrections. The Engineer shall retain two (2) copies of the shop drawings and shall return the remaining copies to the Contractor for corrections. The Contractor shall furnish corrected drawings to the Engineer. The Engineer shall retain two (2) copies of the corrected drawings and will return the balance of the reviewed drawings to the Contractor.

Approval of shop drawings by the Engineer shall not be construed as relieving the Contractor from responsibility for compliance with terms or designs of the Contract Documents nor from responsibility for errors of any sort in the shop drawings.

3. CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS

3.1 It is the intent of the Specifications and Drawings to describe a complete project in accordance with the Contract Documents. The Contract Documents comprise the entire contract between the Owner and the Contractor. They may be altered only by a modification.

3.2 In resolving such conflicts, errors and discrepancies, the documents shall be given preference in the following order: Construction Agreement, Proposal, Modifications and Addenda, Instructions to Bidders, General Conditions, Drawings, Detailed Specifications. Figure dimensions on drawings shall govern over general drawings, and detailed drawings shall govern over general drawings.

DECISIONS OF ENGINEER

The Engineer shall have general administration and direction of the work. When directed by the Owner, they shall inform the Contractor to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract.

The Engineer shall make decisions on all claims of the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

SPECIFICATIONS AND DRAWINGS TO BE COOPERATIVE

The specifications, the plans accompanying them and the other Contract Documents, shall be supplementary to each other, and any material, workmanship, and/or service which may be in one but not called for in the others shall be as binding as if indicated, called for, or implied by all.

The Contractor will understand that the work herein described shall be complete in every detail, notwithstanding every item necessarily involved is not particularly mentioned and the Contractor shall be held to provide all labor and material necessary for the completion of the indicated work.

The Contractor shall, before the award of the contract, report in writing to the Engineers any discrepancy which he may discover between the drawings and the specifications. If the Contractor fails to call such discrepancy to the attention of the Engineers, the subsequent decisions of the Engineers as to which is correct shall be binding and final.

Should any error and inconsistency appear in the drawings or specifications, the Contractor, before proceeding with the work shall make mention of the same to the Engineers for proper adjustment and in no case shall he proceed with the work in uncertainty.

DRAWINGS

The drawings generally shown work fully drawn out on only a portion of the drawings, the remainder being in outline. The drawn out work must be understood as applying to other like or similar places.

Large scale or full size details will be furnished by the Engineer for work which, in his opinion, shall require such drawings, but these shall be considered as explanatory of the drawings and specifications, and not as indicating additional work. Details shall be accurately followed and any deviations therefrom shall be cause for the rejection of any work so executed.

All necessary dimensions are given on the drawings and shall, in all cases, except where a discrepancy occurs, be followed exactly.

The figures and notes on the drawings showing dimensions shall be used instead of scaling.

All prints and specifications issued to the Contractor are understood to be the property of the Engineer and are to be returned to him when no longer required for use on the work, whether paid for or not, and shall not be duplicated or copied without his permission.

ACQUAINTANCE WITH CONDITIONS

The Contractor shall be fully aware of all conditions affecting or that might affect the successful completion of the work or the safety of the completed work. Before submitting his proposal he shall have examined the site of the work and compared the actual conditions on the site with those shown or represented by the plans and specifications, and shall have determined the existence of all physical features, obstructions above or below ground, ground elevations, etc., on or adjacent to the site, that might affect the work in progress or completed. The Contractor shall have determined all excavations or fill required to make the site accessible and the protection required against excessive

measures of the elements, wind, rain, sun to insure the safety of the work. No allowance will be made in the behalf of the Contractor for his failure to adequately familiarize himself with all conditions and no claim will be permitted for relief due to unforeseen conditions.

Immediately upon beginning the job, the Contractor shall check all dimensions of the present work, including the work done by other contractors on this project which affect his work, and shall report to the Engineer any discrepancy between these dimensions and those shown on the plans.

POSSESSION OF SITE AND RESPONSIBILITY

Upon taking possession of the site, the Contractor shall be responsible thereafter until the final acceptance of the work by the Owner for the management, care and maintenance of the site and the work, both new and existing, and shall be solely and wholly responsible for damage thereto and for any and all injury to persons or property incident to or on account of the claims or suits arising therefrom, without loss or expense to the Engineer or Owner. Any approval of means or methods of construction, or protection of persons or property, shall not relieve the Contractor from sole responsibility for the adequacy of such means or methods.

4. USE OF PREMISES

The Contractor shall confine his/her apparatus, the storage of materials and the operations of his/her workers to limits indicated by law, ordinances, permits and directions of the Engineer and shall not exceed those established limits in his operation.

The Contractor shall not load or permit any part of any structure to be loaded with a weight that will endanger its safety.

The Contractor shall enforce all of the Engineer's instructions, including, but not limited to, those regarding signs, advertisements, fires and smoking.

5. LIMITATIONS OF WORK AREA

Limited parking areas, for employees of the Contractor and the subcontractors, shall be designated in the vicinity of the project, and it shall be the responsibility of the Contractor to require such employees to park in this designated area and not any area which may interfere with the operations in and around the construction site.

The Contractor and his/her employees and all subcontractors and their employees shall be aware of the security procedures in effect in the work area. Full responsibilities will be explained at the preconstruction conference.

PROJECT AREA ACCESS

The Contractor shall utilize a haul route on airport property as located on the Project Layout, Phasing and Construction Safety Plan. At no time will construction equipment be allowed on the active portions of the runway, terminal area, hangars, and apron areas. The Contractor will be required to park their equipment and stockpile materials in the areas indicated on the Project Layout, Phasing and Construction Safety Plan. All areas disturbed outside of the normal construction limits as shown on the Plans shall be grassed and returned to their original condition at the expense of the Contractor.

The Contractor shall take all necessary measures as may be required to insure that no unauthorized personnel gain entry onto the airport property.

It shall be the Contractor's responsibility to provide barricades, flagmen, fencing, gates, and security as required, and take all necessary precautions to allow only authorized vehicles and personnel into the construction area.

Upon completion of the work as set forth in these plans and specifications, the Contractor will be required to restore any areas damaged during construction to its original condition, or as directed by the Engineer. Grassing shall be as set forth in these specifications. No separate pay item will be authorized for establishing, maintaining, securing, and restoration for the access to and from the project site. All work-related items covered by the Project Special Provisions shall be included in the contract lump sum bid price for Mobilization.

RADIO COMMUNICATION REQUIREMENTS

The Contractor shall coordinate all personnel and equipment movements to and from the work areas through the Airport Representative. Likewise, any activity in areas adjacent to active runways, taxiways and aprons shall be coordinated with the Airport Manager. Coordination shall be by radio communication when necessary between the Contractor's supervisor on site and the Airport Manager.

DUST CONTROL

It is the intent of these specifications that the Contractor will, by watering, chemicals, vegetation, or other means, prevent the occurrence of dust which will be objectionable to residents of area or violate existing laws or regulations or cause hazards to air traffic.

TEMPORARY BARRICADES

The Contractor shall provide barricades with flashing lights spaced at intervals as noted in the plans at locations across or along the pavement edge where work abuts active runways/taxiways. The barricades shall be anchored in such a manner as to prevent aircraft blasts from moving or overturning them. The Contractor shall maintain the lights and barricades to an operable manner for the duration of the work. Upon removal of the barricades, the pavements shall be restored to their original condition. Barricades shall become the property of the Owner upon completion of the project and stored on the airport at a location determined by the Owner. The cost of providing, locating, moving and removing the barricades along with pavement restoration shall be paid for under Item M-101.

PROTECTION OF EXISTING FACILITIES

All existing facilities will be carefully protected by the Contractor. Any facilities damaged by the Contractor will be repaired immediately and restored to original condition. All runway lights, taxiway lights, signs and structures to remain shall be protected by suitable means.

NIGHT WORK

It is not anticipated that this project will require any nighttime construction. Should the Contractor desire such activities, the Engineer should be notified in writing 14 days in advance for coordination.

MOVING MATERIALS

If it becomes necessary at any time during the construction to move materials which are to enter into the construction, the materials having been temporarily placed, the Contractor, or subcontractor shall, when so directed by the Engineer, move them or cause them to be moved without additional cost to the Owner.

CLEANING DURING CONSTRUCTION AND AT COMPLETION OF WORK

The General Contractor shall keep the premises clean at all times and shall remove all rubbish as often as directed by the Resident Engineer or Owner. If the Contractor does not, at all times, provide men to attend to the cleaning up, on request, in a manner satisfactory to the Resident Engineer, the Resident Engineer may employ such men to direct and charge the cost of same to the account of the Contractor.

Upon completion of the work, the Contractor shall leave the grounds in a neat and clean condition. Construction areas shall be replanted with grass and shrubs where they have been removed.

6. CUTTING, PATCHING AND FITTING

The Contractor shall do all cutting, fitting and patching of his work that may be required to make its several parts come together properly and fit it to receive or to be received by work shown upon or which can be reasonably implied from the Drawings and Specifications for the completed project.

7. OPERATION OF AIRPORT

The Contractor agrees that all work done under the contract shall be carried on in such a manner so as to ensure the regular and continuous operation of the Jackson County Airport. The Contractor further agrees that the sequence of operations under this contract shall be scheduled and carried out so as to ensure said regular and continuous operation. The Contractor will not be allowed to close any areas of construction until so authorized by the Engineer. When the contract work requires the Contractor to work within the areas used by aircraft and support vehicles of the airport on an intermittent basis, the Contractor, through the Engineer, shall maintain constant radio communications with the Airport Operations Manager, immediately obey all instructions to vacate such area and immediately obey all instructions to resume work in such area. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in such areas until the satisfactory conditions are provided.

ACCIDENT PREVENTION

Precaution shall be exercised at all times for the protection of persons (including employees) and property and hazardous conditions shall be guarded against or eliminated. The Contractor shall be responsible for ensuring that all requirements of the Occupational Safety and Health Act are met.

SAFETY ON THE AIRPORT DURING CONSTRUCTION ACTIVITY

Construction Activity and Aircraft Movements: During the time that the Contractor is performing the work contained herein, the Airport Manager facilities along with the aprons, taxiways and runways at the airport will remain in use by aircraft, except as

provided herein, to the extent feasible and convenient. Aircraft operations, unless otherwise specified in the contract specifications, shall always have priority over any and all of the Contractor's operations, and the Contractor shall not allow his employees, subcontractors, material, personnel to enter, remain upon or allow any plant or materials to be brought or to remain upon any part of the airport which would be a hazardous to aircraft or airport users. If aprons, runways or taxiways are required for use by aircraft, the Contractor must suspend their operations, remove all personnel, equipment and materials to a safe distance and stand by until the runway and taxiways are no longer required for use by aircraft.

Construction Activity in the Vicinity of Navigational Aids: Construction activity in the vicinity of FAA navigational aids (i.e. ILS, VOR, ASR, PAPI's, AWOS) requires special consideration. Prospective bidders shall be alerted to this fact by the incorporating language requiring close coordination with the local Airway Facilities Sector as a condition of bid.

PROTECTION OF CABLES, CONTROLS, NAVAIDS & WEATHER BUREAU FACILITIES

The Contractor is hereby informed that there may be installed on the airport FAA NAVAIDS, including, without limitation, UHF, and VHF Receivers and Transmitters, weather facilities and other electric power cables serving other facilities. Such NAVAIDS, Weather Data Instruments and other facilities, and electric cables must be fully protected during the entire construction time. Work under this contract can be accomplished in the vicinity of these facilities and cables when approved in advance by the Engineer and are subject to withdrawal at any time because of changes in the weather, emergency conditions on the existing airfield areas, anticipation of emergency conditions and for any other reason as determined by the Engineers acting under the orders and instructions of the Airport Management and/or designated FAA representative. Any instructions to this Contractor to clear any given area, at any time, by the Engineer, the Airport Manager or their representative (by radio or other means) shall be immediately executed. Construction work will be commenced in the cleared area only when additional instructions are issued by the proper authorities.

Power and control cables leading to and from any FAA NAVAIDS, Weather Data Equipment and other facilities will be marked in the field by the Owner for the information of the Contractor, before any work in their general vicinity is started. Thereafter, through the duration of this contract, the Contractor shall protect from any possible damage, all FAA facilities including crossing with unauthorized equipment, etc.

The Contractor shall immediately repair, with identical material by skilled workmen, any underground cables serving FAA NAVAIDS, Weather Data Equipment and other airport facilities, which are damaged by his workmen, equipment or work. Prior approval of the FAA must be obtained for the materials, workmen, time of day or night, method of repairs, for any temporary or permanent repairs the Contractor proposes to make to any FAA NAVAIDS, Weather Data facilities or other cables and controls serving such NAVAIDS and facilities damaged by the Contractor.

Prior approval of the Engineer or airport representative designated by the Owner must be obtained for the materials, workmen, time of day or night, method of repairs, for any temporary or permanent repairs the Contractor proposes to make to any other airport facilities and cables damaged by this Contractor.

It is recognized that should the Owner incur costs for employee's salaries, engineering fees, and otherwise in connection with the damage and inspection and repair of any such damage caused by the Contractor; and, consequently, if the Owner incurs any loss of income by reason of the diversion of aircraft traffic from the airport resulting from interruption of the use of airport facilities; and that such expenses and loss of income are not measurable now and may not be reasonably ascertainable at the time of any incident caused by this Contractor, the Owner and the Contractor hereby agree to the assessment of liquidated damages in lieu of such expenses of other damages incurred by the Owner. In addition to the obligation of this Contractor to immediately repair any cables or facilities damaged by the Contractor, as set forth above; for each incident where cables are located within five feet of the position defined on the ground and are cut or damaged and the facility served by cables which are cut or damaged is not able to perform its required function resulting in the diversion of aircraft or the interruption of the normal flow of air traffic and aircraft operations on the airport, the sum of \$2,000.00 shall be deducted from any monies due the Contractor, or if no money is due the Contractor, the Owner shall have the right to recover said sum or sums from the Contractor, from their surety, or from both. The amount of these deductions are to cover liquidated damages to the Sponsor incurred by additional and other expenses and damages arising from the incident or incidents caused by the Contractor, and such deductions are not to be considered as penalties.

8. AIRPORT PROJECT PROCEDURES (CONSTRUCTION SAFETY PLAN)

The Contractor shall limit his work within the areas designated and conduct his operations.

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 the airport hazard lighting, barricades, and other safety features.

The Contractor shall be responsible for field marking and protecting all utilities within the construction limits.

All equipment, vehicles, and materials must be stored in the designated storage or staging area or in areas acceptable to the Engineer. The Contractor's vehicles and equipment shall be marked in accordance with state and federal safety regulations.

No open flames or burning will be allowed on Airport property except as specifically authorized by the Engineer in writing.

The Contractor shall comply with all applicable federal, state, and local laws, ordinance, and regulations governing safety, health, and sanitation; shall provide barricades; shall take any other needed action, on his own responsibility, that are reasonably necessary to protect life and health of employees on the job, the safety of airport users, the safety of moving and parked vehicles and other property during the performance of the work.

Except as otherwise specified, FAA AC 150/5370-2F and all its reference shall be used in maintaining airport operational safety during construction. A copy of this Advisory Circular is attached.

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 150/5370-2F; 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 pre-construction conference and each coordination and progress meeting.

Except as specified directly, no measurement or payment will be made for the work in this section; it will be considered as incidental cost to Mobilization and other items of work.

9. INSURANCE

9.1 The contract shall not be executed and signed by the Contractor and Owner until the Contractor has obtained, at his sole expense, all insurance required under this paragraph and such insurance has been approved by the Engineer, nor shall the Contractor allow any subcontractor to commence work on his subcontract until all insurance required to be procured by subcontractors hereunder has been so obtained by or for the subcontractors. If a subcontractor does not take out insurance in his own name and the Contractor wishes to provide insurance protection for such subcontractor and such subcontractor's employees, the Contractor must either (a) procure appropriate policies in the name of the subcontractor, or (b) cause a rider to be attached to the Contractor's policies which must identify the subcontractor thereby covered; provided, however, in the case of the latter option, such rider need not be attached to the Contractor's workers compensation policy if such policy by itself is sufficiently broad to cover the employees of all subcontractors performing work under the contract. All required insurance shall be procured from an insurance company licensed to do business in Georgia and shall be maintained continuously during the life of the contract.

9.2 **Worker's Compensation Insurance** - The Contractor shall take out and maintain during the life of this contract, worker's compensation insurance for all of his employees employed at the site of the project. In case any class of persons engaged in work under this contract is not protected under the worker's compensation laws, the Contractor shall provide all adequate coverage for protection of his employees not otherwise protected.

9.3 **Comprehensive General Liability and Property Damage Insurance** - The Contractor shall take out and maintain during the life of this contract such public liability and property damage insurance as shall protect him and the Owner from claims for damages for personal injury, including death, as well as from claims for property damages which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them, and the amounts of such insurance shall be as follows: Comprehensive General Liability Insurance in an amount not less than \$1,000,000 for accidental injury or death on account of any one occurrence and Property Damage Insurance of not less than 1,000,000 for each occurrence. The Owner shall be named as an additional insured.

9.4 **Comprehensive Automobile Liability Insurance** - The Contractor shall procure and maintain during the life of the contract complete comprehensive automobile liability insurance in the amounts of \$1,000,000 each occurrence for bodily injury or

death and \$1,000,000 each occurrence for property damage. The Owner shall be named as an additional insured.

9.5 Umbrella Excess Liability Insurance - In addition to the requirements of the above paragraphs, the Contractor will be responsible for procuring and maintaining during the life of the contract an umbrella excess liability policy in the amount of \$5,000,000, providing excess coverage on insurance required in Paragraphs 6.2 and 6.3 above. The Owner shall be named as an additional insured.

9.6 Each and every subcontractor performing work covered by this contract shall procure and maintain insurance of the types and in the amounts specified and described in Paragraphs above. It shall be the Contractor's responsibility to ensure that each subcontractor procures and maintains the required insurance.

9.7 The Contractor shall submit to the Engineer before the contract is executed certificates of insurance evidencing coverage required to be procured by the Contractor hereunder. The Contractor shall require each subcontractor to submit to the Contractor evidence of all coverage required of subcontractors by certificates of insurance before such subcontractor commences work on his subcontract.

9.8 Each certificate of insurance and policy required hereunder, except the workers compensation policy, shall bear the provision THAT THE POLICY CANNOT BE CANCELLED OR REDUCED IN AMOUNT AND THAT COVERAGE CANNOT BE ELIMINATED IN LESS THAN THIRTY (30) DAYS AFTER MAILING WRITTEN NOTICE TO THE OWNER, THE INSURED AND THE ENGINEER OF SUCH ALTERATION, CANCELLATION, OR ELIMINATION, THE WRITTEN NOTICE TO BE SENT BY CERTIFIED MAIL.

A provision regarding cancellations, reductions in amount or elimination of coverage to the effect that the insurer's failure to mail notice will impose no liability upon the insurer will not be acceptable. If an insurance policy is canceled, it will be the Contractor's obligation to procure a replacement policy.

10. CONTRACTOR

10.1 The Contractor will supervise and direct the work efficiently and with his/her best skill and attention. He/she will be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor will be responsible to see that the finished work complies accurately with the Contract Documents.

10.2 The Contractor will keep on the project at all times during its progress, a competent resident superintendent whose name and qualifications will be furnished to the Engineer at the preconstruction meeting and who shall not be replaced without prior written notice to the Engineer except under extraordinary circumstances, in which event immediate written notice shall be given to the Engineer. The superintendent will be the Contractor's representative at the site and shall have the authority to act on behalf of the Contractor and to receive any and all notices or instructions given pursuant to the Contract Documents. The superintendent shall be an employee of the Contractor. The Contractor will provide competent and suitable qualified personnel, equipment and supplies to perform the work required by the Contract Documents. He/she will at all times maintain good discipline and order at the site.

10.3 The Contractor will provide competent, suitably qualified personnel, equipment and supplies to survey and layout the work as required by the Contract Documents. The Contractor will be provided horizontal and vertical control points by the Engineer. The Contractor must furnish all additional stakes and materials for layout and construction of the work.

10.4 The Contractor shall attend job site progress conferences as called by the Engineer. The Contractor shall be represented at these job progress conferences by an authorized representative of the home office of the Contractor as well as by the project representative. These meetings shall be open to subcontractors, material suppliers and any others who can contribute beneficially toward maintaining required job progress, and such personnel shall be encouraged by the Contractor to attend. It shall be the principal purpose of these meetings or conferences to effect coordination, cooperation and assistance in every practical way toward the end of maintaining progress of the project on schedule and to complete the project within the specified contract time. The Contractor shall be prepared to assess progress of the work as required in the contract and to recommend remedial measures for correction of progress as may be appropriate. The Engineer shall be the coordinator of the conferences and shall preside as chairperson.

It shall be the responsibility of Contractor to schedule the work of all subcontractors and suppliers to conform to the Construction Schedule submitted by the Contractor at the preconstruction conference and approved by the Engineer and Owner; to maintain such construction schedule; and to notify the Engineer of any changes in the Construction Schedule. If the Contractor falls significantly behind the Construction Schedule, he/she shall, upon the Engineer's request, submit (i) a revised schedule for completion of work within the contract time, such revised schedule shall be subject to approval by the Engineer and Owner, and (ii) such supporting data as the Engineer and/or Owner may require. The Contractor shall modify his/her operations to provide such additional materials, equipment and labor necessary to meet such approved revised schedule. He/she shall be responsible for providing adequate notice to all subcontractors to ensure efficient continuity of all phases of the project work.

In the event that the prosecution of the work is discontinued for any reason, the Contractor shall notify the Engineer at least forty-eight (48) hours in advance of resuming operations.

10.5 If in the opinion of the Engineer, any subcontractor on the project proves to be incompetent or otherwise unsatisfactory, he/she shall be replaced by the Contractor if and when directed by the Engineer in writing.

10.6 ***The Contractor will keep one record copy of all specifications, drawings, addenda, modifications, and shop drawings at the site in good order and annotated to show all changes made during the construction process.*** These shall be available to the Engineer and shall be delivered to him/her for the Owner's purposes upon completion of the project. They shall be used for this purpose only.

10.7 The Contractor shall be responsible for the entire site and the necessary protections, as required by the Engineer and by-laws or ordinances governing such conditions. He/she shall be responsible for any damage to the Owner's property, or that of others, by the Contractor, his/her employees, subcontractors or their employees, and shall make good

such damages. He/she shall be responsible for and pay for any such claims against the Owner.

10.8 The Contractor shall provide cover and/or protect all portions of the work and provide all materials necessary to protect the work whether performed by him/her or any of the subcontractors. Any work damaged through the lack of proper protection, or from any other cause, shall be repaired or replaced without extra cost to the Owner.

The Contractor shall maintain the work during construction and until the work is accepted. This 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. All costs of maintenance work during the 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. Should the Contractor at any time fail to maintain the work as provided herein, the Engineer 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 Engineer's notification, the Engineer may suspend any work necessary for the Owner to correct such unsatisfactory condition, depending on the exigency that exists. Any maintenance cost incurred by the Owner shall be deducted from monies due or to become due the Contractor.

10.9 When allowed, fires will be outlined in the Detailed Specifications. No other fires of any kind will be allowed inside or around the operations during the course of construction without special permission from the Engineer.

10.10 The Contractor shall designate a responsible member of his organization as safety inspector, whose duties shall include accident prevention on the work project. The name of the safety inspector shall be made known to the Engineer at the pre-construction conference.

10.11 In emergencies affecting the safety of persons or the work or property at the site or adjacent thereto, the Contractor, without special instructions or authorization from the Engineer or Owner, is obligated to act at his/her discretion to prevent threatened damage, injury or loss. As soon as practicable, he/she will notify the Engineer of such emergency and he will thereafter act at the Engineer's instruction. The Contractor will give the Engineer prompt written notice of any significant changes in the work or deviations from the Contract Documents caused by such emergency, and a change order, if found by the Engineer to be justified, shall thereupon be issued covering the changes and deviations involved. If the Contractor believes that additional work done by him/her in an emergency entitles him/her to an increase in the contract price or an extension of the contract time, he/she may make a claim therefore as provided in the General Provisions.

10.12 The Contractor shall diligently strive to keep the premises free from accumulation of waste materials or rubbish caused by the work at all times. At the completion of the work, he/she shall remove any remaining waste materials and rubbish from and about the project as well as all tools, construction equipment, machinery and surplus materials. If the Contractor fails to clean up at the completion of the work, the Owner may do so and the

cost thereof shall be charged to the Contractor. The Contractor shall leave the work in condition for occupancy by the Owner such that no cleaning or other operations are required. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily.

10.13 Utilities, Structures and Signs shall be provided as follows:

A. Temporary Structures

The Contractor shall provide all necessary storage sheds, shanties, and other similar structures for his/her own use. All temporary structures shall be placed as directed by the Engineer and shall be built in a sound waterproof manner and shall remain on the premises until their removal is directed by the Engineer.

B. Water

The Contractor shall consult with the Engineer in regard to water supply. A source and manner for obtaining water shall be approved by the Engineer before any water is secured. Any expenses of securing water shall be borne by the Contractor.

C. Electricity

The Contractor shall consult with the Engineer in regard to electrical service. Any expenses of securing construction electrical service from the source of supply shall be borne by the Contractor. The source of supply shall be approved by the Engineer. If the Contractor constructs any temporary structures and/or field office(s) which require the installation of electrical service, the Contractor shall pay for electrical energy used in such facility at the rates of the utility company furnishing power.

D. Signs

Directional signs may be erected on the Owner's property subject to the approval of the Engineer with respect to size, type, and location of such directional signs. Such signs may bear the name of the Contractor and a directional symbol.

A project bulletin board shall be erected and maintained by the Contractor which is waterproof and of sufficient size to post bulletins, wage and labor requirements, DBE requirements and other related information. The size, style and location of this bulletin board must be approved by the Engineer prior to its installation.

No other signs will be permitted except by permission of the Engineer.

E. Use of Terminal Buildings and Facilities

Use of the terminal buildings and facilities located in and around said terminal area by employees of the Contractor and his/her subcontractors and material and equipment suppliers shall be prohibited, except upon written permission from the Engineer.

10.14 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 which 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 by the Engineer. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor shall be responsible for all damage done by his hauling equipment and shall correct such damage at his own expense.

11. OWNER

11.1 The Owner will issue all communications to the Contractor through the Engineer.

11.2 In case of termination of the employment of the Engineer, the Owner will appoint an Engineer who will have and assume all rights and duties held by the original Engineer named herein.

11.3 The Owner shall have the right to take possession of and use any portion of the work notwithstanding the fact that the time for completion of such portion of the work may not have expired but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. Should the Owner take possession of and use any portion of the work for which the time for completion has not yet expired and should the Contractor believe that such prior use increases the cost or delays in the work, he/she may make a claim for an increase in the contract price and/or for an extension of time as provided the General Provisions.

11.4 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.

RIGHT-OF-WAY AND SUSPENSION WORK

The Owner will furnish all land and rights-of-way necessary for the carrying out of this contract and the completion of the work herein contemplated and will use due diligence in acquiring said land and rights-of-way as speedily as possible. But it is possible that all lands and rights-of-way may not be obtained as herein contemplated before construction begins, in which event the Contractor shall begin his work upon such land and rights-of-way as the Owner may have previously acquired and no claim for damages whatsoever will be allowed by reason of the delay in obtaining the remaining lands rights-of-way. Should the Owner be prevented or enjoined from proceeding with the work, or from authorizing its prosecution, either before or after the commencement, by reason of any litigation or by reason of its inability to procure any lands or rights-of-way for the said work, the Contractor will not be entitled to make or assert any claim for the damage by reason of said delay, or to withdraw from the contract except by consent of the Owner, but time for completion of the work will be extended to such time as the Owner determines will compensate for the time lost by such delay, such determination to be set forth in writing.

OWNER'S OPTION

In all cases where the choice of more than one make or style of material is specified, the final selection of material rests with the Owner. Where any difference occurs, in price, such difference is to be given at the time the bids are submitted. After the contracts have been signed, the Owner reserves the right to choose whichever material he desires assuming that the price is not increased thereby, and where the specifications call for the stipulated item or other equal thereto and approved, or other words to that effect, it is to be taken the same as if the choice of more than one material was specified and the selection will rest with the Owner the same as above.

WORK NOT SHOWN ON PLANS

In the carrying out of this work as contemplated by the plans and specifications, there may arise certain items of work for which definite plans have not yet been decided upon. All such work, when authorized, shall be paid for as provided in "CHANGES IN WORK".

REMOVAL OF MATERIALS AND CORRECTION OF WORK

All materials of unsound or otherwise unfit character and all workmanship not in accordance with the terms of the contract will be condemned by the Engineer.

The Contractor shall promptly remove from the premises all condemned materials whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work to the satisfaction of the Engineer, and without expense to the Owner, and shall bear the expense of making good all work of other contractors which is destroyed or damaged by such removal and replacement.

If the Contractor does not remove such condemned work and within a reasonable time, fixed by written notice, the Owner may remove them and may store the materials at the expense of the Contractor. If the Contractor does not pay to the Owner the expense of such removal within ten (10) days time thereafter, the Owner may, upon ten (10) days written notice, sell such materials at auction or private sale and shall account for the net proceeds thereof, after deduction of all costs and expenses that rightfully should have been borne by the Contractor.

EXTRAS

Without invalidating the contract, the Owner may order extra work or make changes by altering, adding to or deducting from the work, the contract sum being adjusted accordingly, and the consent of the Surety being first obtained where necessary or desirable. All the work of the kind bid upon shall be paid for at the price stipulated in the proposal, and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by the Owner or its Engineer acting officially for the Owner, and the price is stated in such order.

ALTERATIONS, CHANGES, ETC.

All changes, alterations, or instructions in regard to any features of the work that differs from the plans and specifications **MUST** be in writing in all cases, and no verbal orders will be regarded as a basis for claims for extras.

All claims for extra work must be made in writing within five (5) days after the instructions are issued; otherwise, it will be assumed that the instructions or charges incur no additional cost.

No extra work is to be performed or any changes made that involve any extra cost until the Engineers have authorized the Contractor to proceed, in writing, except in emergency endangering life or property when the procedure shall be set forth under "CHANGES IN WORK".

CLAIMS FOR EXTRA COST

No claim for extra work or cost shall be allowed unless the same was done in pursuance of a written order of the Engineer, as aforesaid, and the claim is presented with the first estimate after the changed or extra work is done. When work is performed under the terms of section "Changes in Work – (c)" of these General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost and, when requested by the Owner, give the Owner access to accounts relating thereto.

12. TESTING AND SURVEYING

12.1 Field surveys shall be made by the Engineer (1) to determine compliance of construction with the Plans and Specifications and (2) for quantity measurements. The Owner will incur the costs of routine compliance and measurement surveys performed during the ordinary course of construction. However, the Contractor shall pay all costs of required and necessary surveys to support his construction and for any additional field surveys required due to inconsistent or inaccurate construction techniques, or performance of unacceptable or unauthorized work, or any other reason determined by the Engineer to be principally the cause of the Contractor. Said additional surveys are not considered to be routine. Work found to be unacceptable or unauthorized shall not be paid for and, if directed by the Engineer, shall be removed at the Contractor's expense. All surveys shall be performed by a licensed surveyor.

INSPECTION AND TESTING OF MATERIALS

- (a) All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be determined by the Owner. All retesting required due to unsuitable material submitted by Contractor shall be paid for by the Contractor.
- (b) Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

MATERIALS, SERVICES AND FACILITIES

- (a) It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide any pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete, and deliver the work within the specified time.
- (b) Any work necessary to be performed after regular working hours, on Sundays or Legal Holidays shall be performed without additional expense to the Owner.

SAMPLES

The CONTRACTOR shall furnish to the Engineer, for approval, complete samples of all of the materials which he proposes to use, where samples are called for in the specifications or required by the Engineers.

All samples submitted must be clearly labeled as to the name of the Contractor, name of the manufacturer, quality of material and the name of the job.

After samples have been approved, they will be sent to the job to be compared with the materials as they arrive on the job. All materials shall be in strict accordance with the approved samples.

13. CHANGE OF THE CONTRACT PRICE

13.1 The Contract Price constitutes the total compensation payable to the Contractor for performing the work subject to additions and deductions as provided in the Contract Documents. All duties, responsibilities and obligations assigned to or undertaken by the Contractor shall be at his expense without change in the Contract Price. Except as otherwise specified, the Contract Price may only be changed by a Change Order.

13.2 The Contractor shall not act on instructions received by him from persons other than the Engineer, and any claims for extra compensation on account of such instructions will not be honored.

13.3 In determining the amount of Contract Price adjustment, the parties shall apply the following methods, as appropriate:

(A) **Emergency Work:** In the event of emergency endangering life or property, the Contractor may be directed by the Engineer to proceed on a time and material basis whereupon the Contractor shall so proceed and keep accurately in such form as may be required, a correct account of costs together with all proper invoices, payrolls, and supporting data therefore.

(B) **Claims for Increase:** Where the Engineer and Owner, upon receipt of a proper claim for increase in Contract Price, determine that an increase is warranted and where none of the above methods of Contract Price adjustment are applicable, the amount of increase shall be determined by negotiation between the contracting parties.

ACTION TIME ON CONTRACTOR PAY REQUESTS

This paragraph is intended to supersede all provisions of the Georgia Prompt Pay Act (House Bill 837). The Owner intends to make timely payments to the Contractor, following receipt of applications. Consideration shall be given to Owner's requirements for processing the Contractor's payment application. For projects funded with Federal or State funds, payment may be delayed for thirty calendar days, contingent upon reimbursement of the applicable funds to the Owner from the Government Agency funding the project. Delays in payments in excess of thirty days, caused by delay in Government reimbursement to Owner, will not be subject to payment of interest.

14. CORRECTION OF WORK BEFORE FINAL PAYMENT

Any work, materials, fabricated items, or other parts of the work which have been found by the Engineer to be faulty or not in accordance with the Contract Documents shall be condemned and shall be removed from the work site by the Contractor, and immediately replaced by new work in accordance with the contract at no additional cost to the Owner. Work or property of the Owner or others damaged or destroyed by virtue of such condemned work shall be made good at the expense of the Contractor.

Correction of condemned work described above shall be commenced by the Contractor immediately after notice from the Engineer and shall be pursued to completion.

Final payment will not be made until certification by the Engineer.

Should the Contractor fail to proceed reasonably with the above-mentioned corrections, then the Owner may, after twenty-four (24) hours following notice to the Contractor from the Engineer, proceed with correction, paying the cost of same from amounts due or to become due to the Contractor. Condemned work so removed shall be the property of the Contractor, and shall be removed from the site of the work by him/her within five (5) days after notice to remove it, or thereafter may be disposed of by the Owner without compensation to the Contractor, and the cost of such disposal shall be deducted from amounts due or to become due to the Contractor.

Should the cost of correction of the work and, if applicable, disposal of the condemned work by Owner exceed amounts due or to become due the Contractor, then the Contractor and his/her surety shall be liable for and shall pay to the Owner the amount of said excess.

15. CORRECTION OF WORK AFTER FINAL PAYMENT

Neither the final certificate, final payment, occupation of the premises by the Owner, nor any provision of the Contract, nor any other act or instrument of the Owner or the Engineer shall relieve the Contractor from responsibility for negligence, or faulty material or workmanship, or failure to comply with the Drawings and Specifications. He/she shall correct or make good any defects due thereto and repair any damage resulting therefrom which may appear during a period of twelve (12) months following final acceptance of the work except as stated otherwise under the provisions of the Contract Documents. The Owner will report any defects as they may appear to the Engineer, who will give instructions for a time limit for completion of corrections to the Contractor, which instructions shall be binding upon the Contractor. The Engineer will be the judge as to the responsibility for correction of defects.

LIENS

Neither the final payment or any part of the retained percentage shall become due until the Contractor shall deliver to the Owner a complete release of all liens arising out of this contract, or receipts in full in lieu thereof, and, if required in either case, an affidavit that insofar as he has knowledge or information, the releases and receipts include all the materials and labor for which a lien might be filed, but the Contractor may, if any subcontractor refuses to furnish a release of claims or receipts in full, furnish a bond satisfactory to the Owner to indemnify him against any lien. If any lien should remain unsatisfied after all payments are made, then the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such lien, including all costs and reasonable Attorney's fee

MAINTENANCE

The Contractor will be required to maintain all work done by him in a first class condition for sixty (60) days after the same has been completed as a whole and the Engineers have notified the Contractor in writing that the work has been finished to their satisfaction. The retained percentage will not be due or payable to the contractor until the sixty (60) day maintenance period has expired.

Any damage to the site or surroundings, including paving, shoulders, culverts, drainage structures, grass, etc., shall be repaired by the Contractor and all parts of the site shall be left in as good repair as before the work started.

CONTRACTOR'S OBLIGATION

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery, equipment facilities and means, except as herein otherwise expressly specified, necessary or proper and complete all the work required by this contract, within the time herein specified, in accordance with the provisions of this contract and said specification and in accordance with the plans and drawings of the work covered by this contract and any and all supplemental plans and drawings in accordance with the directions of the Engineer as given from time to time during the progress of the work. He shall furnish, erect, maintain and remove such construction plant and temporary works as may be required. He alone shall be responsible for the safety, efficiency and adequacy of his plant, appliances and methods and for any damage which may result from their failure of their improper construction, maintenance or operation. The Contractor shall observe, comply with and be subject to all terms, conditions, requirements and limitations of the contract and specifications and shall do, carry on and complete the entire work to the satisfaction of the Engineer and the Owner.

16. OWNER'S RIGHT TO DO WORK

If, during the progress of the work or during the period of guarantee, the Contractor fails to prosecute the work properly or to perform any provision of the contract, the Owner, after written notice to the Contractor from the Engineer or Owner, may perform or have performed that portion of the work and may deduct the cost thereof from any amounts due or to become due the Contractor.

Should the cost of such action of the Owner exceed the amount due or to become due the Contractor, then the Contractor and his/her surety shall be liable for and shall pay to the Owner the amount of said excess.

17. CONTRACTOR, SUBCONTRACTOR & SUPPLIER AFFIDAVIT

The final payment of retained amounts due the Contractor on account of the contract shall not become due until the Contractor has furnished to the Owner through the Engineer (A) an affidavit by the Contractor signed, sworn, and notarized to the effect that all payments for materials, services, or for any other reason in connection with his/her contract have been satisfied and that no claims or liens exist against the Contractor in connection with his/her contract; and (B) affidavits from each subcontractor and supplier signed, sworn and notarized to the effect that (i) each such subcontractor or supplier has been paid in full by the Contractor for all work performed and/or materials supplied by him/her in connection with the project, and (ii) that all payments for materials, services, and for any other reason in connection with his/her subcontract or supply contract have been satisfied and that no claims or liens exist against the subcontractor or supplier in connection therewith. In the event that the Contractor cannot obtain similar affidavits from subcontractors or supplier to protect the Contractor and the Owner from possible liens or claims against the subcontractors or suppliers, the Contractor shall state in his/her affidavit that no claims or liens exist against any subcontractor or supplier to the best of the Contractor's knowledge, and that if any appear afterwards, the Contractor shall save the Owner harmless on account thereof.

REPORTS, RECORDS AND DATA

The Contractor shall submit to the Owner such schedules of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this contract.

18. WARRANTY AND GUARANTEE

18.1 The Contractor shall, at its sole cost and expense, make all necessary repairs, replacements, and corrections of any nature or description, interior or exterior, structural or nonstructural, that shall become necessary by reason of faulty workmanship or materials which appear within a period of one (1) year from the date of final acceptance; provided, however, that notwithstanding the preceding, if any longer guarantee period is specified for any particular materials or workmanship under the Plans and Specifications, or under any subcontract, or in connection with any manufactured unit which is installed in the structure, or under the laws of the State of Georgia, the longer guarantee period shall govern.

18.2 If within any guarantee period, repairs or changes are required in connection with the work, which in the opinion of the Engineer are rendered necessary as the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the contract, the Contractor shall, promptly upon receipt of notice from the Engineer and without expense to the Owner:

- A. Place in satisfactory condition, in every particular, all of such guaranteed work;
- B. Correct all defects therein;

- C. Make good all damage which, in the opinion of the Engineer is the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the contract; and,
- D. Make good any work or material, or any equipment or contents disturbed in fulfilling any such guarantee.

If, in fulfilling the requirements of the contract or of any guarantee embraced therein or required thereby, the Contractor disturbs any work guaranteed under another contract, he/she shall restore such disturbed work to a condition satisfactory to the Engineer and shall guarantee such restored work to the same extent as it was guaranteed under such other contract.

If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the Owner may have the defects corrected and the Contractor and his/her surety shall be liable for all expenses incurred.

All special guarantees applicable to definite parts of the work that may be shown in the specifications or other papers forming a part of the contract shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

Manufacturer's standard guarantees or warranties which do not comply with the time limit specified herein shall be extended by the Contractor automatically without further action on the part of the Owner or the Engineer.

Neither the final certificate of payment nor any provision relieves the Contractor of responsibility for faulty material or workmanship and, unless otherwise specified, he shall make right any defects due thereto and pay for the damage or other work resulting therefrom which occur within the said period of one (1) year.

19. DISPUTE RESOLUTION

In the event of any dispute, claim, question or disagreement arising out of or relating to this Agreement or breach thereof, the parties hereto shall use their best effort to settle such matter by mutual agreement. To this effect, responsible, authorized representatives of the parties shall meet, consult, and negotiate with each other in good faith, and, recognizing their mutual interests, attempt to reach a joint and equitable solution satisfactory to both parties. If they do not reach such solution within a period of thirty (30) days after the first notice by either party to the other of the existence of the dispute, and upon the notice of either party to the other, the dispute shall be resolved by proceeding with the dispute resolution procedures set forth herein below.

If the parties fail to agree on the resolution of any dispute through the negotiation process above, the parties shall proceed in good faith to attempt to settle the dispute through mediation under the Construction Industry Mediation Rules of the American Arbitration Association ("AAA"), subject to and in accordance with its rules governing the mediation of such disputes. Any party who chooses to first refer the dispute to mediation may, in its notice to the other, elect to refer the matter to either the AAA or to the CIDRS for mediation. Mediation is a precondition to further dispute resolution by the parties, and the dispute resolution procedure set forth herein below shall only be available following a declaration of impasse by the mediator or by the mutual agreement of the parties.

If impasse is declared in any mediated dispute, the matter shall be submitted to arbitration with the AAA or Construction Industry Rules of the CIDRS. Notice of intent to seek arbitration of any unresolved dispute shall be given by the claiming party within ten (10) days of the declaration of impasse. The responding party shall select either AAA or CIDRS within seven (7) days of the receipt of the notice of intent to arbitrate.

The following additional rules and procedures shall apply to all disputes arising under this Agreement and shall be in addition to or, in the case of any conflict with, shall be in lieu of the applicable rules of the AAA:

- (1) The parties acknowledge that this Agreement may evidence a transaction involving interstate commerce. Nonetheless, in rendering the award, the arbitrator(s) shall determine the rights and obligations of the parties according to substantive and procedural laws of the State of Georgia.
- (2) All negotiations and mediation sessions and all arbitration hearings shall take place in the offices of the Owner in Jefferson, Georgia, or such other place as the parties may agree upon.
- (3) In the arbitration of any dispute less than \$100,000, the sole arbitrator shall be a retired Georgia or Federal Judge residing in the State of Georgia. In disputes of \$100,000 or more, an arbitration panel of three (3) experienced construction industry professionals shall be appointed and shall include (a) one architect or engineer, (b) one construction attorney or retired State or Federal Judge residing in the State of Georgia and (c) either a construction industry executive or a senior staff person of a public or private owner of a facility of the kind described in this Agreement.
- (4) The owner, the contractor, all subcontractors, material suppliers, engineers, designers, architects, and their respective bonding companies and insurers and all other parties concerned with the construction of the improvements described in this Agreement are bound by this Dispute Resolution Clause to the greatest extent permitted by law, and all such parties consent and agree to the consolidation of all phases of the dispute resolution process hereunder with the dispute resolution proceedings pending among other parties whenever such proceeding arises out of the same transaction or are related to the same subject matter. The motion to consolidate may be made by any interested party and will be by an order of the arbitrator(s)' petitioned, or if such arbitrator(s) fail to make such order, parties may apply to the Superior Court with jurisdiction in Hall County, Georgia, for such order.
- (5) At any time in the dispute resolution proceeding, the parties may agree to a high/low limitation which shall be binding upon all further proceedings.
- (6) Discovery procedures may not be undertaken during negotiations or mediation phases. However, the parties shall proceed in good faith to make disclosures to the other party of all facts, documents, records and other evidence upon which each party bases its claim or defense.
- (7) Prior to any arbitration hearing, limited discovery shall be permitted for the purpose of obtaining production of documents and taking depositions. All discovery shall be governed by the Rules of Civil Procedure imposed by the State of Georgia. All issues regarding conformation with discovery requests shall be decided by the

arbitrator(s). Request for discovery shall be initiated within thirty (30) days after the notice of intent to arbitrate is given and shall be fully responded to within thirty (30) days after receipt. All discovery, including depositions, shall be completed within seventy-five (75) days of the notice of intent to arbitrate or the arbitrator(s) or either party shall extend or reduce the time for discovery.

(8) Upon request of either party made prior to the initial hearing the arbitrators' award shall be in writing and shall include findings of fact and conclusions of law which support the award.

(9) Either party may appeal the arbitration award to appellate arbitration by filing with the AAA, within twenty (20) days after transmittal of the award, a written brief; not to exceed twenty (20) pages, stating the reason why the arbitrator(s)' decision should be reversed or modified. The opposing party shall have twenty (20) days to file a responsive brief; not to exceed twenty (20) pages. An appellate arbitrator shall be appointed by the AAA and shall be a retired Georgia Superior Court or Appellate Judge. Either party may request oral argument which must be concluded within fourteen (14) days following submission of the final brief. No additional evidentiary material may be introduced in the appellate arbitration. The appellate arbitrator shall render a written decision affirming, reversing modifying or remanding the arbitrator(s)' decision within twenty (20) days after receiving the final appellate submission. The appellate arbitrator may base its decision only one of the following grounds:

(a) Any ground specified in 9 U.S.C. Sections 10 or 11;

(b) A material error of applicable law by the arbitrator;

(c) A determination that award was partially or wholly arbitrary or capricious.

The appellate arbitrator may render a final decision on appeal or may remand the matter for further proceeding by the arbitrator(s).

(10) All fees and expenses of the mediation and of the arbitration procedures shall be borne by the parties equally. However, each party shall bear the expense of its own counsel, experts, witnesses, and preparation and presentation of proofs. Only in the case of extreme abuse of the procedure may the arbitrator(s) reallocate such costs and expenses among the parties.

(11) The dispute resolution procedures set forth hereinabove shall be the exclusive remedies available to the parties to the Agreement to settle or resolve any and all disputes arising thereunder and any settlement or arbitral award may be enforced by an action in the Superior Court with jurisdiction in Jefferson City in Jackson County, Georgia.

20. TAXES

The Contractor shall include in the bids and pay all taxes (including sales taxes/or use) assessed by any authority on the work or the labor and materials used therein. The Contractor understands and agrees that the Contractor is responsible for payment of any such taxes owned, and further agrees that in the case of the joint liability of the Contractor and the Owner for any such tax, the Contractor is responsible for paying the tax. The Contractor agrees to indemnify and hold harmless the Owner against and in respect of any such tax liabilities. In the event the Contractor fails to pay

any such tax when due and the Owner is required to pay such tax, the Contractor agrees to reimburse Owner for same and further agrees that the Owner shall have the right to set off the amount of such tax against any sum owed the Contractor. It is understood by the parties that the above section of this contract shall apply to and be fully enforceable against the Contractor, regardless of whether it is "engaged in business" in Georgia, is an out-of-state Contractor, or is legally domesticated and qualified to do business in this state.

21. SEVERABILITY

If any provision of the Contract shall be declared invalid or unenforceable, the remainder of the Contract shall continue in full force and effect.

22. MISCELLANEOUS CONTRACT PROVISIONS

A. Airport Improvements Program (AIP) Project. Items of work in this contract are included in the AIP which is being undertaken and accomplished by the Jackson County in accordance with the terms and conditions of a grant agreement between the Jackson County and the United States, under the Airport and Airway Improvement Act of 1982 and Part 152 of the Federal Aviation Regulations (14 CFR Part 152.), pursuant to which the United States has agreed to pay a percentage of the costs of the project that are determined to be allowable project costs under that Act. The United States is not a party to this contract and no reference in this contract to the FAA or any representative thereof or to any rights granted to the FAA or any representative thereof, or the United States, by the Contract, makes the United States a party to this contract.

B. Consent to Assignment. The Contractor shall obtain the prior written consent of the Owner to any proposed assignment of any interest in or part of this contract.

C. FAA Inspection and Review. The Contractor shall allow any authorized representative of the FAA to inspect and review any work or materials used in the performance of this contract.

D. Subcontracts. The Contractor shall insert in each of his/her subcontracts the provisions contained in Paragraphs A and C of this section and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

23. DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF RESIDENT PROJECT REPRESENTATIVE

A. GENERAL

Resident Project Representative (hereafter referred to as "RPR") shall be representative of the Engineer and shall act under the direction of the Engineer. Engineer and RPR shall have authority to act on behalf of Owner only to the extent provided in the contractual agreements to which the Engineer is a party. The Resident Project Representative shall confer with the Engineer regarding their required actions at intervals and on occasions appropriate to the progress of construction. The RPR interaction and communications in matters pertaining to the on-site work in general shall be only with the Engineer and the

Contractor. The RPR shall communicate with subcontractors only through, or with the full knowledge and authorization of, the Contractor or his superintendent. The RPR shall generally communicate with the Owner only through or as directed by the Engineer.

B. LIMITATIONS OF AUTHORITY

Except upon written instructions and directions of the Engineer, the Resident Project Representative shall not:

1. Authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
2. Assume or undertake any of the responsibilities of the Contractor, subcontractors or the Contractor's superintendent.
3. Expedite the Work for the Contractor.
4. Advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.
5. Advise on or issue directions as to safety precautions and programs in connection with the Work.
6. Authorize or suggest that the Owner occupy the Project in whole or in part.
7. Personally conduct or participate in specialized field or laboratory tests or inspections conducted by others or require special inspection or testing.
8. Assist the Contractor in maintaining an up-to-date copy of Record Drawings or prepare or certify to the preparation of Record Drawings.
9. Issue a Certificate of Payment or a Certificate of Completion of the Work.
10. Order the Contractor to stop the Work or any portion thereof.

24. PROJECT TIME AND LIQUIDATED DAMAGES

The work as described by the contract documents and as shown on the plans shall be completed and ready to use by the Owner within the time shown below after the date of Notice to Proceed. The time schedule for completion of this project is critical and liquidated damages as prescribed in the Contract will be enforced.

Contract Time: 60 Calendar Days

Owner and Contractor recognize that time is of the essence and that the Owner will suffer financial loss if the work is not substantially complete in accordance with the time specified herein. They also recognize the delays, expense and difficulties involved in providing legal or arbitration proceeding the actual loss suffered by the Owner if the work is not completed on time. Accordingly, instead of requiring any such proof, the Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the Owner the amounts stipulated herein.

The Contractor further understands and hereby expressly agrees that in addition to liquidated damages specified herein, to pay the Owner the actual costs to the Owner for any inspector or inspectors necessarily employed by the Owner on the work and the actual costs to the Owner for the Engineer's observation of the construction and project representative services including travel and subsistence expenses after the date specified for the project completion until work is completed and ready for final payment. Further, the Contractor agrees that the sums to be paid the Owner may be deducted from the sum due the Contractor for work performed as provided in Section 90 of the General Provisions.

Liquidated Damages Schedule

For not substantially completing all construction within the Contract time specified:

\$1,000.00 per calendar day

The Contractor shall complete all punch list items determined by the Owner and the Engineer within 10 consecutive calendar days from the date of Final Inspection (unless otherwise agreed upon with the Owner and Engineer). Failure to do so will result in liquidated damages of \$1,500.00 per day beyond the 10-day period.

25. LIST OF DRAWINGS

- 1 Cover Sheet
- 2 Project Layout and Construction Safety Plan
- 3 Crack Seal Plan
- 4 Marking Demolition Plan
- 5 Marking Demolition Plan
- 6 Marking Plan
- 7 Marking Plan
- 8 Marking Details
- 9 Lighting and Signage Plan
- 10 Lighting and Signage Details

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DIVISION IV

TECHNICAL SPECIFICATIONS

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SPECIFICATION M-101 MOBILIZATION

DESCRIPTION

101-1.1 The work covered by this section consists of preparatory work and operations including, but not limited to the following items:

1. Those items of work necessary for the movement of personnel, equipment, supplies, and incidental to the project site.
2. Those items of work necessary for the establishment of all offices, buildings, staging areas, temporary access and haul roads, and other facilities necessary for work on the project.
3. Those items necessary for the maintenance of vehicle and construction traffic; including but not limited to; portable & stationary construction signs, barricades, (airfield barriers will be paid for under a separate pay item), construction exits, drums, cones, and other traffic or operational control devices.
4. All other items of work and operations which must be performed or costs incurred prior to beginning work on the various items on the project site.
5. Also included in this work shall be all removal and restoration of the staging areas, temporary access and haul roads, and all other temporary measures and devices installed during the project. There will be no separate payment for seeding and mulching of these areas if seeding and mulching are required.
6. Installation and removal of temporary markers for runway closures.

101-2.1 Airfield Barriers: Contractor shall provide airfield barriers of the type shown on the plans and specified in this item. The barriers shall be fabricated of a resiliently deformable, non-conductive material to prevent damage to aircraft. The barriers must be of a modular design, nestable for compact storage, and low enough not to interfere with air traffic. Barriers shall be liquid-filled to prevent movement due to aircraft. Barriers shall be Multi-Barrier Model AR-10x96 Safety Barricade, or approved equal.

Barriers shall be brightly colored & shall meet FAA requirements for visibility. Available mountings shall also be provided to mount warning lights as needed or required.

Airfield barriers shall become the property of the Owner at the completion of the project. Contractor shall neatly store barriers at a location on airport determined by Engineer.

101-2.2 Lighted Runway Closure Markers: Contractor shall provide Lighted Runway Closure Markers of the type shown on the plans and specified in this item.

The use of Alternate Runway Closure Markers will be permitted if the Runway will be closed during daylight hours on working days only and will reopen at the end of each working day.

Contractor will be responsible for the installation, operation and removal of the Lighted Runway Closure Markers and/or Alternate Runway Closure Markers for the duration of the project. Neither Lighted Runway Closure Markers nor Alternate Runway Closure Markers will become property of the Airport at the completion of this project.

101-3.1 Foreign Object Debris (FOD) Protection: The contractor shall take measures necessary to remove all potential Foreign Object Debris (FOD) from runways, taxiways, and apron areas. FOD shall be classified as any material such as dirt, rocks, sticks, or miscellaneous trash that can be hazardous to aircraft tires, or capable of becoming a projectile that could be hazardous to aircraft and personnel. The airfield pavement areas shall be free of FOD at all times.

101-4.1 Project Phasing: The Contractor shall phase the barricade installation, demolition, milling, paving, grading, and markings as shown in the plans. Each phase of construction must be complete, approved by the Engineer, and reopened to Airport users prior to the commencement of the following phase of work.

BASIS OF PAYMENT

All work covered by this section will be paid for at the contract lump sum price for "Mobilization", and unit cost per each for "Airfield Barrier" & "Runway Closure Marker".

Partial payments for the item of "Mobilization" 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 "Mobilization" on each of these partial pay estimates, provided the amount bid for "Mobilization" does not exceed 5 percent of the total amount bid for the contract. Where the amount bid for the item of "Mobilization" exceeds 5 percent of the total amount bid for the contract, the portion exceeding 5 percent of the total amount bid will be paid on the last partial pay estimate.

Payment for "Airfield Barriers" and "Lighted Runway Closure Markers" shall be per each individual unit accepted & provided on the project. This price shall be full compensation for installing, relocated, repairing, stockpiling, storing and furnishing all materials, all labor, equipment, tools and incidentals necessary to complete this item. There will be no separate payment for "Alternate Runway Closure Markers" and "Construction Exits".

Payment will be made under:

Item M-101	Mobilization – lump sum
Item M-101	Airfield Barriers – per each
Item M-101	Runway Closure Markers – per each

END OF SPECIFICATION M-101

SPECIFICATION P-101 SURFACE PREPARATION

DESCRIPTION

101-1.1 This item shall consist of preparation of existing pavement surfaces for overlay, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable drawings.

EQUIPMENT

101-2.1 All equipment shall be specified hereinafter or as approved by the Engineer. The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 REMOVAL OF EXISTING PAVEMENT

a. Concrete: The existing concrete to be removed shall be freed from the pavement to remain unless jackhammers are used for the complete removal. This shall be accomplished by line drilling or sawing through the complete depth of the slab one foot inside the perimeter of the final removal limits or outside the load transfer devices, whichever is greater. In this case, the limits of removal would be located on joints. If line drilling is used, the distance between holes shall not exceed the diameter of the hole. The pavement between the perimeter of the pavement removal and the saw cut or line-drilled holes shall be removed with a jackhammer. Where the perimeter of the removal limits is not located on the joint, the perimeter shall be saw cut 2 inches in depth or 1/4 the slab thickness, whichever is less. Again, the concrete shall be line drilled or saw cut the full depth of the pavement 6 inches inside the removal limits. The pavement inside the saw cut or line shall be broken by methods suitable to the Contractor; however, if the material is to be wasted on the airport site, it shall be reduced to a maximum size designated by the airport owner. The Contractor's removal operation shall not cause damage to cables, utility ducts, pipelines, or drainage structures under the pavement. Any damage shall be repaired by the Contractor at no expense to the airport owner.

b. Asphaltic Concrete: Asphaltic concrete pavement to be removed shall be cut to the full depth of the bituminous material around the perimeter of the area to be removed. The pavement shall be removed in such a manner that the joint for each layer of pavement replacement is offset one foot from the joint in the preceding layer. This does not apply if the removed pavement is to be replaced with concrete or soil. If the material is to be wasted on the airport site, it shall be broken to a maximum size as designated by the airport owner.

101-3.2 PREPARATION OF JOINTS AND CRACKS. All joints and cracks in bituminous and concrete pavements to be overlaid with asphaltic concrete shall be cleaned of joint

and crack sealer, debris, and vegetation. Any excess joint or crack sealer on the surface of the pavement shall also be removed from the pavement surface. If vegetation is a problem a soil sterilant shall be applied. Cracks and joints wider than 3/8 inch shall 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 Table 1.

TABLE 1

Sieve Size	Percent Passing
No. 4	100
No. 8	90-100
No. 16	65-90
No. 30	40-60
No. 50	25-42
No. 100	15-30
No. 200	10-20

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 Engineer.

Proportions of asphalt emulsion & aggregate shall be determined in the field and may be varied to facilitate construction requirements. The proportions will be approximately one part asphalt emulsion to five parts aggregate by volume. Material shall be poured into the joints or cracks or shall be placed in the joint or crack and compacted to form a voidless mass. The joint or crack shall be filled within 0 to 1/8 inch of the surface. Any material spilled outside the width of the joint shall be removed from the surface prior to constructing the overlay. Where concrete overlays are to be constructed, only the excess joint material on the surface and vegetation in the joints need to be removed.

Contractor is responsible for all marking touch-up where new joint and crack repair (aka Crack Seal) has resulted in the removal, damage and/or covering up of existing markings. If existing marking that are not a part of the proposed marking plans (within this project) are removed, damaged and/or covered up, then it will be the responsibility of the contractor to perform marking touch-ups at no additional cost to the Owner.

101-3.3 REMOVAL OF PAINT AND RUBBER. All paint and rubber over one foot wide that will affect the bond of the new overlay shall be removed from the surface of the existing pavement. Chemicals, high-pressure water, heater scarifier (asphaltic concrete only), cold milling, or sandblasting may be used. Any methods used shall not cause major damage to the pavement. Major damage is defined as changing the properties of the pavement or removing pavement over 1/8 inch deep. If chemicals are used, they shall comply with the state's environmental protection regulations. No material shall be deposited on the runway shoulders. All wastes shall be disposed of in areas indicated in this specification or shown on the plans. This specification shall not be used for removal

of rubber deposits to improve skid resistance or obliterate traffic markings where a new overlay is not to be constructed.

101-3.4 CONCRETE SPALL OR FAILED ASPHALTIC CONCRETE PAVEMENT REPAIR.

a. Repair of Concrete Spalls in Areas to be overlaid with Asphalt: The Contractors shall repair all spalled concrete as shown on the plans or as directed by the Resident Engineer. The perimeter of the repair shall be sawed a minimum of 1 inch deep or shall be cut with approved tools to this depth. 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 asphaltic concrete with a minimum Marshal stability of 1,200 lbs. and maximum flow of 20. The material shall be compacted with equipment approved by the Resident Engineer until the material is dense and no movement or marks can be noted. The material shall not be placed in lifts over 4 inches in depth. This method of repair applies only to pavement to be overlaid.

b. Asphaltic Concrete Pavement Repair: 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. The base course and subbase shall be replaced if it has been infiltrated with clay, silt, or other material affecting the load-bearing capacity. Materials and methods of construction shall comply with the other applicable sections of this specification.

101-3.5 COLD PLANING.

a. Patching: The machine shall be capable of cutting a vertical edge without chipping or spalling the edges of the pavement to remain. The machine shall have a positive method of controlling the depth of cut. The Engineer shall layout the area to be milled. The area shall be laid out with straightedges in increments of 1-foot 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 machine, or areas that are damaged because of his negligence, shall not be included in the measurement for payment.

b. Profiling, Grade Correction, or Surface Correction: The machine shall have a minimum width of 10 feet. It shall be equipped with electronic grade control devices on both sides that will cut the surface to the grade and tolerances specified. The machine shall cut vertical edges. A positive method of dust control shall be provided. The machine shall be capable of discharging the millings in a truck or leaving them in a defined windrow.

101-3.6 PIPE REMOVAL. Pipe removal shall consist of removal of existing pipes as shown on the plans and backfilling open area to proposed finished grades. No pipe shall be removed until proposed improvements down stream; pipes or drainage ditches have been installed and are functioning, unless existing conditions will still function. Pipe removal shall include the removal of any inlet, headwall or other structure attached to the pipe that is not

being reused in the new pipe network. The Contractor shall properly dispose of the removed pipe and structures off airport property. No additional payment will be made for off airport disposal. Removal beyond the limits established on the plans or damage to items to remain by the contractor's equipment or by the contractor's operations shall be repaired or replaced as directed by the engineer at the contractor's expense.

All backfill shall be installed and compacted per the requirements under item P-152.

METHOD OF MEASUREMENT

101-4.1. MEASUREMENT.

a. General: If there is no quantity shown in the bidding schedule, the work covered by this section shall be considered as a subsidiary obligation of the Contractor covered under the other contract items. Only accepted work will be measured.

b. Pavement Removal: The unit of measurement for pavement removal shall be the number of square yards 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.

c. Joint and Crack Repair: The unit of measurement for joint and crack repair shall be the linear foot of joint.

d. Paint and Rubber Removal: The unit of measurement for paint and rubber removal shall be the square foot.

e. Spall and Failed Asphaltic Concrete Pavement Repair:

(1) The unit of measure for concrete spall repair shall be the number of square feet. The average depth of the patch shall be agreed upon by the Contractor and the Resident Engineer. The quantity shall be divided in the following categories:

- (a) 0 to 4 inches in average depth.
- (b) 4 to 8 inches in average depth.
- (c) Greater than 8 inches in average depth.

(2) Unit of measure for failed asphaltic concrete pavement shall be as follow:

- (a) Asphaltic Concrete Square Yards.
- (b) Base Course Square Yards.
- (c) Subbase Course Square Yards.
- (d) Subgrade Square Yards.

- f. **Cold Planing:** The unit of measure for cold planing or milling of bituminous pavements shall be the number square yards of milled pavement surface approved, completed, and accepted. Milling in multiple cuts will be counted as one surface, not multiple surfaces. No separate measurement will be made for the depth of the cold planing or milling.
- g. **Concrete Pad Removal:** The unit of measurement for removal of concrete pads shall be per each.
- h. **Removal of Existing Storm Sewer Pipe and Structures:** Removal of existing storm sewer pipe and structures shall not be measured, but shall be paid for lump sum.
- i. **Touch-ups to Existing Marking:** Costs for all materials, labor, equipment, etc. associated with the marking touch-ups shall be considered incidental to the work for Joint and Crack Repair (paid per linear foot) and shall be applied using the correct paint color and in accordance with Specification P-620 for full application including reflective media (where applicable). There will be no separate payment for this item.

BASIS OF PAYMENT

101-5.1 PAYMENT. Pavement Joint & Crack Repair will be paid for at the contract unit price per linear foot. 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.

101-5.2 PAYMENT. Pavement Marking Removal will be paid for at the contract unit price per square foot. This price shall be for all full compensation for furnishing all materials and

for all preparation, hauling, and placing of the material for all labor, equipment, tools and incidentals necessary to complete this item.

Payment will be made under:

Item P-101 Pavement Joint and Crack Repair – per linear foot

Item P-101 Pavement Marking Removal – per square foot

END OF SPECIFICATION P-101

SPECIFICATION P-605 JOINT SEALING FILLER

DESCRIPTION

- 605-1.1** This item is for providing and installing a resilient and adhesive joint sealing filler capable of effectively sealing joints and cracks in pavements.

MATERIALS

- 605-2.1** **JOINT SEALERS.** Joint sealing materials shall meet the requirements of ASTM D 6690 - Joint and Crack Sealants, Hot-Applied, for Concrete and Asphalt Pavements.

Each lot or batch of sealing compound shall be delivered to the jobsite in manufacturer's original sealed container. Each container shall be marked with the manufacturer's name, batch or lot number, the safe heating temperature, and shall be accompanied by the manufacturer's certification stating that the compound meets the requirements of this specification.

CONSTRUCTION METHODS

- 605-3.1** **TIME OF APPLICATION.** Joints shall be sealed as soon after completion of the curing period as feasible and before the pavement is opened to traffic, including construction equipment. Pavement temperature shall be above **50°F (10°C)** at the time of installation of the poured joint sealing material.

- 605-3.2** **PREPARATION OF JOINTS.**

- a. Sawing.** All joints shall be sawed in accordance with specifications and plan details. Immediately after sawing the joint, the resulting slurry shall be completely removed from joint and adjacent area by flushing with a jet of water, and by use of other tools as necessary.
- b. Sealing.** Immediately before sealing, the joints shall be thoroughly cleaned of all remaining laitance, curing compound, and other foreign material. Cleaning shall be accomplished by sandblasting. Sandblasting shall be accomplished in a minimum of two passes. One pass per joint face with the nozzle held at an angle directly toward the joint face and not more than 3 inches from it. Upon completion of cleaning, the joints shall be blown out with compressed air free of oil and water. Only air compressors with operable oil and water traps shall be used to prepare the joints for sealing. Joint faces shall be surface dry when the seal is applied.

605-3.3 INSTALLATION OF SEALANTS. Joints shall be inspected for proper width, depth, alignment, and preparation, and shall be approved by the Engineer before sealing is allowed. Sealants shall be installed in accordance with the following requirements:

Hot Poured Sealants. The joint sealant shall be applied uniformly solid from bottom to top and shall be filled without formation of entrapped air or voids. A backing material shall be placed as shown on the plans and shall be non-reactive and non-adhesive to the concrete or the sealant material. The heating kettle shall be an indirect heating type, constructed as a double boiler. A positive temperature control and mechanical agitation shall be provided. The sealant shall not be heated to more than 20°F (-11°C) below the safe heating temperature. The safe heating temperature can be obtained from the manufacturer's shipping container. A direct connecting pressure type extruding device with nozzles shaped for insertion into the joint shall be provided. Any sealant spilled on the surface of the pavement, structures and/or lighting fixtures, shall be removed immediately.

Cold Applied Sealants. Cold applied joint sealing compound shall be applied by means of pressure equipment that will force the sealing material to the bottom of the joint and completely fill the joint without spilling the material on the surface of the pavement. A backing material shall be placed as shown on the plans and shall be non-reactive and non-adhesive to the concrete or the sealant material. Sealant that does not bond to the concrete surface of the joint walls, contains voids, or fails to set to a tack-free condition will be rejected and replaced by the Contractor at no additional cost. Before sealing the joints, the Contractor shall demonstrate that the equipment and procedures for preparing, mixing, and placing the sealant will produce a satisfactory joint seal. This shall include the preparation of two small batches and the application of the resulting material. Any sealant spilled on the surface of the pavement, structures and/or lighting fixtures, shall be removed immediately.

Backup Material. The use of a backup material or bond breaker in the bottom of the joint to be filled is recommended to control the depth of the sealant, to achieve the desired shape factor, and to support the sealant against indentation and sag. Backup materials and bond breakers should be compatible with the sealant, should not adhere to the sealant, should be compressible without extruding the sealant, and should recover to maintain contact with the joint faces when the joint is open. Jute, paper, or other moisture absorbing material shall not be used for the backing material. The backing material shall be rubber, butyl rubber, or other approved material that will not react with the joint sealer and will not form a gas when the hot joint sealer is applied.

METHOD OF MEASUREMENT

605-4.1 There will be no separate measurement for joint sealing material.

BASIS OF PAYMENT

605-5.1 Payment for joint sealing material shall be made incidental to P-101, Pavement Joint and Crack Repair.

TESTING REQUIREMENTS

ASTM D 412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension

ASTM D 1644 Test Methods for Nonvolatile Content of Varnishes

MATERIAL REQUIREMENTS

ASTM D 6690 Joint and Crack Sealants, Hot-Applied, for Concrete and Asphalt Pavements

FED SPEC Sealants, Joint, Two-Component, Jet-Blast Resistant, Cold Applied SS-S-200E(2)

END OF SPECIFICATION P-605

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SPECIFICATION P-610
STRUCTURAL PORTLAND CEMENT CONCRETE

DESCRIPTION

610-1.1 This item shall consist of plain and reinforced structural portland cement concrete, prepared and constructed in accordance with these specifications, at the locations and of the form and dimensions shown on the plans.

MATERIALS

610-2.1 GENERAL. Only approved materials, conforming to the requirements of these specifications, shall be used in the work. They may be subjected to inspection and tests at any time during the progress of their preparation or use. The source of supply of each of the materials shall be approved by the Engineer before delivery or use is started. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to insure the preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed therein.

In no case shall the use of pit-run or naturally mixed aggregates be permitted. Naturally mixed aggregate shall be screened and washed, and all fine and coarse aggregates shall be stored separately and kept clean. The mixing of different kinds of aggregates from different sources in one storage pile or alternating batches of different aggregates will not be permitted.

Aggregates shall be tested for deleterious reactivity with alkalis in the cement that may cause excessive expansion of the concrete. Acceptance of aggregates shall be based upon satisfactory evidence furnished by the Contractor that the aggregates, combined with other mixture constituents, do not produce excessive expansion in the concrete. This evidence shall include service records of concrete of comparable properties under similar conditions or exposure and certified records of tests by a testing laboratory that meets the requirements of ASTM C 1077. Tests shall be made in accordance with ASTM C 1260. Test specimens shall be produced using all components (e.g. coarse aggregate, fine aggregate, cement and fly ash...) to be included in the produced concrete. If the mean expansion of the test specimens, tested in accordance with ASTM C 1260, does not exceed 0.10 % at 16 days from casting the aggregates shall be accepted. If the mean expansion at 16 days is greater than 0.10% but less than 0.15%, the aggregate may be accepted based upon satisfactory service records and acceptance of the aggregate by a State Highway Department specifically addressing Alkali-Silica Reactivity. If the expansion is greater than 0.15%, the aggregate shall not be accepted for use.

610-2.2 COARSE AGGREGATE. The coarse aggregate for concrete shall meet the requirements of ASTM C 33. Crushed stone aggregate shall have a durability factor, as determined by ASTM C 666, greater than or equal to 95. The Engineer may consider and

reserve final approval of other State classification procedures addressing aggregate durability.

Coarse aggregate shall be well graded from coarse to fine and shall meet one of the gradations shown in Table 1, using ASTM C 136.

610-2.3 FINE AGGREGATE. The fine aggregate for concrete shall meet the requirements of ASTM C 33.

The fine aggregate shall be well graded from fine to coarse and shall meet the requirements of Table 2 when tested in accordance with ASTM C 136:

TABLE 1. GRADATION FOR COARSE AGGREGATE

Sieve Designation (square openings)	Percentage by Weight Passing Sieves						
	2"	1-1/2"	1"	3/4"	1/2"	3/8"	No.4
No. 4 to 3/4 in.			100	90-100		20-55	0-10
No. 4 to 1 in.		100	90-100		25-60		0-10
No. 4 to 1-1/2 in.	100	95-100		35-70		10-30	0-5

TABLE 2. GRADATION FOR FINE AGGREGATE

Sieve Designation (square openings)	Percentage by Weight Passing Sieves
3/8 inch (9.5 mm)	100
No. 4 (4.75 mm)	95-100
No. 16 (1.18 mm)	45-80
No. 30 (0.60 mm)	25-55
No. 50 (0.30 mm)	10-30
No. 100 (0.15 mm)	2-10

Blending will be permitted, if necessary, in order to meet the gradation requirements for fine aggregate. Fine aggregate deficient in the percentage of material passing the No. 50 mesh sieve may be accepted, provided that such deficiency does not exceed 5% and is remedied by the addition of pozzolanic or cementitious materials other than portland cement, as specified in 610-2.6 on admixtures, in sufficient quantity to produce the required workability as approved by the Engineer.

610-2.4 CEMENT. Cement shall conform to the requirements of ASTM C 150 - Type I . The Contractor shall furnish vendors' certified test reports for each carload, or equivalent, of cement shipped to the project. The report shall be delivered to the Engineer before permission to use the cement is granted. All such test reports shall be subject to verification by testing sample materials received for use on the project.

610-2.5 WATER. The water used in concrete shall be free from sewage, oil, acid, strong alkalis, vegetable matter, and clay and loam. If the water is of questionable quality, it shall be tested in accordance with AASHTO T 26.

610-2.6 ADMIXTURES. The use of any material added to the concrete mix shall be approved by the Engineer. Before approval of any material, the Contractor shall be required to submit the results of complete physical and chemical analyses made by an acceptable testing laboratory. Subsequent tests shall be made of samples taken by the Engineer from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

Pozzolanic admixtures shall be fly ash or raw or calcined natural pozzolons meeting the requirements of ASTM C 618.

Air-entraining admixtures shall meet the requirements of ASTM C 260. Air-entraining admixtures shall be added at the mixer in the amount necessary to produce the specified air content.

Water-reducing, set-controlling admixtures shall meet the requirements of ASTM C 494, Type A, water-reducing or Type D, water-reducing and retarding. Water-reducing admixtures shall be added at the mixer separately from air-entraining admixtures in accordance with the manufacturer's printed instructions.

610-2.7 PREMOLDED JOINT MATERIAL. Premolded joint material for expansion joints shall meet the requirements of ASTM D 1751.

610-2.8 JOINT FILLER. The filler for joints shall meet the requirements of Item P-605, unless otherwise specified in the proposal.

610-2.9 STEEL REINFORCEMENT. Reinforcing shall conform to the requirements of:

Welded Steel Wire Fabric	ASTM A 185
Welded Deformed Steel Fabric	ASTM A 497
Bar Mars	ASTM A 184 or A 704

610-2.10 COVER MATERIALS FOR CURING. Curing materials shall conform to one of the following specifications:

Waterproof paper for curing concrete	ASTM C 171
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Polyethylene Sheeting for Curing Concrete	ASTM C 171
Liquid Membrane-Forming Compounds for Curing Concrete	ASTM C 309, Type 2

CONSTRUCTION METHODS

610-3.1 GENERAL. The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified herein. All machinery and equipment owned or controlled by the Contractor, which he proposes to use on the work, shall be of sufficient size to meet the requirements of the work, and shall be such as to produce satisfactory work; all work shall be subject to the inspection and approval of the Engineer.

610-3.2 CONCRETE COMPOSITION. The concrete shall develop a compressive strength of **4,000** psi in 28 days as determined by test cylinders made in accordance with ASTM C 31 and tested in accordance with ASTM C 39. The concrete shall contain not less than 470 pounds of cement per cubic yard (280 kg per cubic meter). The concrete shall contain 5 percent of entrained air, plus or minus 1 percent, as determined by ASTM C 231 and shall have a slump of not more than 4 inches (10 cm) as determined by ASTM C 143.

610-3.3 ACCEPTANCE SAMPLING AND TESTING. Concrete for each structure will be accepted on the basis of the compressive strength specified in paragraph 3.2. The concrete shall be sampled in accordance with ASTM C 172. Compressive strength specimens shall be made in accordance with ASTM C 31 and tested in accordance with ASTM C 39.

Concrete cylindrical test specimens shall be made in accordance with ASTM C 31 and tested in accordance with ASTM C 39. The Contractor shall cure and store the test specimens under such conditions as directed. The Engineer will make the actual tests on the specimens at no expense to the Contractor.

610-3.4 PROPORTIONING AND MEASURING DEVICES. When package cement is used, the quantity for each batch shall be equal to one or more whole sacks of cement. The aggregates shall be measured separately by weight. If aggregates are delivered to the mixer in batch trucks, the exact amount for each mixer charge shall be contained in each batch compartment. Weighing boxes or hoppers shall be approved by the Engineer and shall provide means of regulating the flow of aggregates into the batch box so that the required and exact weight of aggregates can be readily obtained.

610-3.5 CONSISTENCY. The consistency of the concrete shall be checked by the slump test specified in ASTM C 143.

610-3.6 MIXING. Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C 94.

610-3.7 MIXING CONDITIONS. The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F (4°C) without permission of the Engineer. If permission is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F (10°C) nor more than 100°F (38°C). The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his/her expense.

Retempering of concrete by adding water or any other material shall not be permitted.

The delivery of concrete to the job shall be in such a manner that batches of concrete will be deposited at uninterrupted intervals.

610-3.8 FORMS. Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the Engineer. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as designed on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The Contractor shall bear responsibility for their adequacy. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes.

The internal ties shall be arranged so that, when the forms are removed, no metal will show in the concrete surface or discolor the surface when exposed to weathering. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied shortly before the concrete is placed. Forms shall be constructed so that they can be removed without injuring the concrete or concrete surface. The forms shall not be removed before the expiration of at least 30 hours from vertical faces, walls, slender columns, and similar structures; forms supported by falsework under slabs, beams, girders, arches, and similar construction shall not be removed until tests indicate that at least 60% of the design strength of the concrete has developed.

610-3.9 PLACING REINFORCEMENT. All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concreting. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

610-3.10 EMBEDDED ITEMS. Before placing concrete, any items that are to be embedded shall be firmly and securely fastened in place as indicated. All such items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The embedding of wood shall be avoided. The concrete shall be spaded and consolidated around and against embedded items.

610-3.11 PLACING CONCRETE. All concrete shall be placed during daylight, unless otherwise approved. The concrete shall not be placed until the depth and character of foundation, the adequacy of forms and falsework, and the placing of the steel reinforcing

have been approved. Concrete shall be placed as soon as practical after mixing and in no case later than 1 hour after water has been added to the mix. The method and manner of placing shall be such to avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. Dropping the concrete a distance of more than 5 feet (1.5 m), or depositing a large quantity at one point, will not be permitted. Concrete shall be placed upon clean, damp surfaces, free from running water, or upon properly consolidated soil.

The concrete shall be compacted with suitable mechanical vibrators operating within the concrete. When necessary, vibrating shall be supplemented by hand spading with suitable tools to assure proper and adequate compaction. Vibrators shall be manipulated so as to work the concrete thoroughly around the reinforcement and embedded fixtures and into corners and angles of the forms. The vibration at any joint shall be of sufficient duration to accomplish compaction but shall not be prolonged to the point where segregation occurs. Concrete deposited under water shall be carefully placed in a compact mass in its final position by means of a tremie, a closed bottom dump bucket, or other approved method and shall not be disturbed after being deposited.

610-3.12 CONSTRUCTION JOINTS. When the placing of concrete is suspended, necessary provisions shall be made for joining future work before the placed concrete takes its initial set. For the proper bonding of old and new concrete, such provisions shall be made for grooves, steps, keys, dovetails, reinforcing bars or other devices as may be prescribed. The work shall be arranged so that a section begun on any day shall be finished during daylight of the same day. Before depositing new concrete on or against concrete that has hardened, the surface of the hardened concrete shall be cleaned by a heavy steel broom, roughened slightly, wetted, and covered with a neat coating of cement paste or grout.

610-3.13 EXPANSION JOINTS. Expansion joints shall be constructed at such points and of such dimensions as may be indicated on the drawings. The premolded filler shall be cut to the same shape as that of the surfaces being joined. The filler shall be fixed firmly against the surface of the concrete already in place in such manner that it will not be displaced when concrete is deposited against it.

610-3.14 DEFECTIVE WORK. Any defective work discovered after the forms have been removed shall be immediately removed and replaced. If any dimensions are deficient, or if the surface of the concrete is bulged, uneven, or shows honeycomb, which in the opinion of the Engineer cannot be repaired satisfactorily, the entire section shall be removed and replaced at the expense of the Contractor.

610-3.15 SURFACE FINISH. All exposed concrete surfaces shall be true, smooth, and free from open or rough spaces, depressions, or projections. The concrete in horizontal plane surfaces shall be brought flush with the finished top surface at the proper elevation and shall be struck-off with a straightedge and floated. Mortar finishing shall not be permitted, nor shall dry cement or sand-cement mortar be spread over the concrete during the finishing of horizontal plane surfaces.

When directed, the surface finish of exposed concrete shall be a rubbed finish. If forms can be removed while the concrete is still green, the surface shall be pointed and wetted and then rubbed with a wooden float until all irregularities are removed. If the concrete has hardened before being rubbed, a carborundum stone shall be used to finish the surface. When approved, the finishing can be done with a rubbing machine.

610-3.16 CURING AND PROTECTION. All concrete shall be properly cured and protected by the Contractor. The work shall be protected from the elements, flowing water, and from defacement of any nature during the building operations. The concrete shall be cured as soon as it has sufficiently hardened by covering with an approved material. Water-absorptive coverings shall be thoroughly saturated when placed and kept saturated for a period of at least 3 days. All curing mats or blankets shall be sufficiently weighted or tied down to keep the concrete surface covered and to prevent the surface from being exposed to currents of air. Where wooden forms are used, they shall be kept wet at all times until removed to prevent the opening of joints and drying out of the concrete. Traffic shall not be allowed on concrete surfaces for 7 days after the concrete has been placed.

610-3.17 DRAINS OR DUCTS. Drainage pipes, conduits, and ducts that are to be encased in concrete shall be installed by the Contractor before the concrete is placed. The pipe shall be held rigidly so that it will not be displaced or moved during the placing of the concrete.

610-3.18 COLD WEATHER PROTECTION. When concrete is placed at temperatures below 40°F (4°C), the Contractor shall provide satisfactory methods and means to protect the mix from injury by freezing. The aggregates, or water, or both, shall be heated in order to place the concrete at temperatures between 50°F and 100°F (10°C and 38°C).

Calcium chloride may be incorporated in the mixing water when directed by the Engineer. Not more than 2 pounds (908 grams) of Type 1 nor more than 1.6 pounds (726 grams) of Type 2 shall be added per bag of cement. After the concrete has been placed, the Contractor shall provide sufficient protection such as cover, canvas, framework, heating apparatus, etc., to enclose and protect the structure and maintain the temperature of the mix at not less than 50°F (10°C) until at least 60% of the designed strength has been attained.

610-3.19 FILLING JOINTS. All joints that require filling shall be thoroughly cleaned, and any excess mortar or concrete shall be cut out with proper tools. Joint filling shall not be started until after final curing and shall be done only when the concrete is completely dry. The cleaning and filling shall be carefully done with proper equipment and in a manner to obtain a neat looking joint free from excess filler.

METHOD OF MEASUREMENT

610-4.1 No measurement will be made for Portland cement concrete or reinforcing steel. These items shall be included in the items of which they are a part.

BASIS OF PAYMENT

610-5.1 No separate payment will be made for Portland cement concrete or reinforcing steel. These items shall be included in unit prices of the items of which they are a part.

TESTING REQUIREMENTS

ASTM C 31 Making and Curing Test Specimens in the Field

ASTM C 39 Compressive Strength of Cylindrical Concrete Specimens

ASTM C 136 Sieve Analysis of Fine and Coarse Aggregates

ASTM C 138 Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete

ASTM C 143 Slump of Hydraulic Cement Concrete

ASTM C 231 Air Content of Freshly Mixed Concrete by the Pressure Method

ASTM C 666 Resistance of Concrete to Rapid Freezing and Thawing

ASTM C 1077 Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation

ASTM C 1260 Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)

MATERIAL REQUIREMENTS

- ASTM A 184 Specification for Fabricated Deformed Steel Bar or Rod Mats for Concrete Reinforcement
- ASTM A 185 Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
- ASTM A 497 Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement
- ASTM A 615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- ASTM A 704 Welded Steel Plain Bars or Rod Mats for Concrete Reinforcement
- ASTM C 33 Concrete Aggregates
- ASTM C 94 Ready-Mixed Concrete
- ASTM C 150 Portland Cement
- ASTM C 171 Sheet Materials for Curing Concrete
- ASTM C 172 Sampling Freshly Mixed Concrete
- ASTM C 260 Air-Entraining Admixtures for Concrete
- ASTM C 309 Liquid Membrane-Forming Compounds for Curing Concrete
- ASTM C 494 Chemical Admixtures for Concrete
- ASTM C 595 Blended Hydraulic Cements
- ASTM C 618 Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
- ASTM D 1751 Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)
- AASHTO T 26 Quality of Water to be Used in Concrete

END OF SPECIFICATION P-610

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SPECIFICATION P-620 RUNWAY AND TAXIWAY MARKING

DESCRIPTION

620-1.1 This item shall consist of the painting of numbers, markings, and stripes on the surface of runways, taxiways, and aprons, in accordance with these specifications and at the locations shown on the plans, or as directed by the Engineer.

MATERIALS

620-2.1 MATERIALS ACCEPTANCE. The Contractor shall furnish manufacturer's certified test reports for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. The reports can be used for material acceptance or the Engineer may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the Engineer upon arrival of a shipment of materials to the site.

620-2.2 PAINT. Paint shall be Waterborne and shall meet the requirements of Federal Specification TT-P-1952E, Type II. Paint shall be furnished in white 37925, and yellow 33538 or 33655, in accordance with Federal Standard No 595.

620-2.3 REFLECTIVE MEDIA. Glass beads shall meet the requirements for Federal Specification. TT-B-1325D, Type III. Glass beads shall be treated with all compatible coupling agents recommended by the manufacturers of the paint and reflective media to ensure adhesion and embedment.

620-2.4 TESTING. Paint and glass bead samples are subject to GDOT testing. If paint contractor has not been tested within a year, paint and bead samples from the supplier shall be provided immediately after contract award. This will allow the testing of samples by the GDOT lab to insure compliance with federal paint specifications. One gallon sample of each color and one gallon of reflective beads are required for testing. Testing may take several weeks to complete.

CONSTRUCTION METHODS

620-3.1 WEATHER LIMITATIONS. The painting shall be performed only when the surface is dry and when the surface temperature is at least 45°F (7°C) and rising and the pavement surface temperature is at least 5°F (2.7°C) above the dew point. Markings shall not be applied when the pavement temperature is greater than 120°F.

620-3.2 EQUIPMENT. Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type marking machine suitable for application of traffic paint. It shall produce an even and uniform film thickness at the required coverage and shall apply markings of uniform cross sections and clear-cut edges without running or spattering and without over spray.

620-3.3 PREPARATION OF SURFACE. Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other foreign material that would reduce the bond between the paint and the pavement. The area to be painted shall be cleaned by sweeping and blowing or by other methods as required to remove all dirt, laitance, and loose materials without damage to the pavement surface. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the Engineer.

620-3.4 LAYOUT OF MARKINGS. Proposed markings shall be laid out in advance of the paint application. All Runway and Taxiway markings shall receive glass beads.

620-3.5 APPLICATION. Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the Engineer.

The edges of the markings shall not vary from a straight line more than 1/2 inch in 50 feet and marking dimensions and spacing shall be within the following tolerances:

Dimension and Spacing	Tolerance
36 inches or less	± 1/2 inch
greater than 36 inches to 6 feet	± 1 inch
greater than 6 feet to 60 feet	± 2 inches
greater than 60 feet	± 3 inches

The paint shall be mixed in accordance with the manufacturer's instructions and applied to the pavement with a marking machine at the rate(s) shown in Table 1. The addition of thinner will not be permitted.

Temporary pavement markings shall be made immediately at one-third (33%) of the listed application rate. No reflective media will be placed on temporary markings. Final application must be made at the full application rate listed 30 days after placement of bituminous surface course or seal coat to properly set reflective media.

TABLE 1. APPLICATION RATES FOR PAINT AND GLASS BEADS

Paint Type	Paint Square feet per gallon, ft ² /gal	Glass Beads, Type I, Gradation A Pounds per gallon of paint—lb./gal.	Glass Beads, Type III Pounds per gallon of paint—lb./gal.	Glass Beads, Type IV Pounds per gallon of paint—lb./gal.

Waterborne	115	7	12	--
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Glass beads shall be distributed upon the marked areas at the locations shown on the plans to receive glass beads immediately after application of paint. A dispenser shall be furnished which is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate(s) shown in Table 1. Glass beads shall not be applied to black paint. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made.

Contractor is responsible for all marking touch-up where new joint and crack repair (aka Crack Seal) has resulted in the removal, damage and/or covering up of existing markings. If existing marking that are not a part of the proposed marking plans (within this project) are removed, damaged and/or covered up, then it will be the responsibility of the contractor to perform marking touch-ups at no additional cost to the Owner.

All emptied containers shall be returned to the paint storage area for checking by the Engineer. The containers shall not be removed from the airport or destroyed until authorized by the Engineer.

620-3.6 APPLICATION--PREFORMED AIRPORT PAVEMENT MARKINGS.

a. ASPHALT AND PORTLAND CEMENT. To ensure minimum single-pass application time and optimum bond in the marking/substrate interface, the materials must be applied using a variable speed self-propelled mobile heater with an effective heating width of no less than 16 feet (4.88 m) and a free span between supporting wheels of no less than 18 feet (5.49 m). The heater must emit thermal radiation to the marking material in such a manner that the difference in temperature of 2 inch (5.08 cm) wide linear segments in the direction of heater travel must be within 5 percent of the overall average temperature of the heated thermoplastic material as it exits the heater. The material must be able to be applied at ambient and pavement temperatures down to 35°F (2°C) without any preheating of the pavement to a specific temperature. The material must be able to be applied without the use of a thermometer. The pavement shall be clean, dry, and free of debris. A non-VOC sealer with a maximum applied viscosity of 250 centi-Poise (ASTM D 2393) must be applied to the pavement shortly before the markings are applied. The supplier must enclose application instructions with each box/package.

620-3.7 PROTECTION AND CLEANUP. After application of the paint, all markings shall be protected from damage until the paint is dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings of paint. The Contractor shall remove from the site all debris, waste, loose or unadhered reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the Engineer. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and Federal environmental statutes and regulations.

METHOD OF MEASUREMENT

620-4.1 The quantity of runway and taxiway markings to be paid for shall be the number of square feet of painting, including reflective media, performed in accordance with the specifications and accepted by the Engineer. Separate measurement shall be made for temporary runway and taxiway markings for any color at one-third the full application rate and with no reflective media.

BASIS OF PAYMENT

620-5.1 Payment shall be made at the respective contract price per square foot for runway and taxiway painting, including reflective media. Payment shall be made at the respective contract price per square foot for aircraft tie-down painting, non-reflective. The prices shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.

Costs for all materials, labor, equipment, etc. associated with the marking touch-ups shall be considered incidental to the work for Joint and Crack Repair (paid per linear foot) and shall be applied using the correct paint color and in accordance with Specification P-620 for full application including reflective media (where applicable).

Payment will be made under:

Item P-620	Reflective Pavement Marking – Yellow – per square foot
Item P-620	Reflective Pavement Marking – White – per square foot
Item P-620	Non-Reflective Pavement Marking – Black – per square foot

TESTING REQUIREMENTS

ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C 146	Chemical Analysis of Glass Sand
ASTM C 371	Wire-Cloth Sieve Analysis of Nonplastic Ceramic Powders
ASTM D 92	Test Method for Flash & Fire Points by Cleveland Open Cup
ASTM D 711	No-Pick-Up Time of Traffic Paint
ASTM D 968	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive

ASTM D 1213-54(1975)	Test Method for Crushing Resistance of Glass Spheres
ASTM D 1652	Test Method for Epoxy Content of Epoxy Resins
ASTM D 2074	Test Method for Total Primary, Secondary & Tertiary Amine Values of Fatty Amines by Alternative Indicator Method
ASTM D 2240	Test Method for Rubber Products-Durometer Hardness
ASTM G 15453	Operating Light and Water-Exposure Apparatus (Fluorescent Light Apparatus UV-Condensation Type) for Exposure of Nonmetallic Materials.
Federal Test Method	Paint, Varnish, Lacquer and Related Materials; Methods of Inspection,
Standard No. 141D/GEN	Sampling and Testing

MATERIAL REQUIREMENTS

ASTM D 476	Dry Pigmentary Titanium Dioxide Pigments Products
Code of Federal Regulations	40 CFR Part 60, Appendix A: Definition of Traverse Point Number and Location
Code of Federal Regulations	29 CFR Part 1910.1200 – Hazard Communications
FED SPEC TT-B-1325C	Beads (Glass Spheres) Retroreflective
AASHTO M 247	Glass Beads Used in Traffic Paints
FED SPEC TT-P-1952D	Paint, Traffic and Airfield Marking, Waterborne
Commercial Item Description (CID) A-A-2886A	Paint, Traffic, Solvent Based
FED STD 595	Colors used in Government Procurement

END OF SPECIFICATION P-620

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SPECIFICATION L-108
UNDERGROUND POWER CABLE FOR AIRPORTS

DESCRIPTION

108-1.1 This item shall consist of furnishing and installing power cables that are direct buried and furnishing and/or installing power cables within conduit or duct banks per these specifications at the locations shown on the plans. It includes excavation and backfill of trench for direct-buried cables only. Also included are the installation of counterpoise wires, ground wires, ground rods and connections, cable splicing, cable marking, cable testing, and all incidentals necessary to place the cable in operating condition as a completed unit to the satisfaction of the Engineer. This item shall not include the installation of duct banks or conduit, trenching and backfilling for duct banks or conduit, or furnishing or installation of cable for FAA owned/operated facilities. Requirements and payment for trenching and backfilling for the installation of underground conduit and duct banks are in Item L-110, Airport Underground Electrical Duct Banks and Conduits.

EQUIPMENT AND MATERIALS

108-2.1 General.

a. Airport lighting equipment and materials covered by advisory circulars (AC) shall be approved under the Airport Lighting Equipment Certification Program per AC 150/5345-53, current version.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the Engineer.

c. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the Engineer) and replaced with materials that comply with these specifications at the Contractor's cost.

d. All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional

equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the plans and specifications. The Contractor's submittals shall be neatly bound in a properly sized 3-ring binder, tabbed by specification section. The Engineer reserves the right to reject any and all equipment, materials, or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner. The Contractor shall be responsible to maintain a minimum insulation resistance per AC 150/5340-26B, Maintenance Airport Visual aid Facilities, Table 5-1 and paragraph 5.1.3.1, with isolation transformers connected in new circuits and new segments of existing circuits through the end of the contract warranty period.

108-2.2 Cable. Underground cable for airfield lighting facilities (runway and taxiway lights and signs) shall conform to the requirements of AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits latest edition. Conductors for use on 6.6 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #8 American wire gauge AWG), L-824 [Type B, Type C], 5,000 volts, non-shielded, with [ethylene propylene insulation, cross-linked polyethylene insulation]. Conductors for use on 20 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #6 AWG, L-824 [Type B, Type C], 5,000 volts, non-shielded, with [ethylene propylene insulation, cross-linked polyethylene insulation]. L-824 conductors for use on the L-830 secondary of airfield lighting series circuits shall be sized in accordance with the manufacturer's recommendations. All other conductors shall comply with FAA and National Electric Code (NEC) requirements. Conductor sizes noted above shall not apply to leads furnished by manufacturers on airfield lighting transformers and fixtures.

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Federal Specification J-C-30 and shall be type THWN-2, 75°C. Conductors for parallel (voltage) circuits shall be sized and installed in accordance with NFPA-70, National Electrical Code.

Unless noted otherwise, all 600-volt and less non-airfield lighting conductor sizes are based on a 75°C, THWN-2, 600 volt insulation, copper conductors, not more than three single insulated conductors, in raceway, in free air. The conduit/duct sizes are based on the use of THWN-2, 600 volt insulated conductors. The Contractor shall make the necessary increase in conduit/duct sizes for other types of wire insulation. In no case shall the conduit/duct size be reduced. The minimum power circuit wire size shall be #12 AWG.

Conductor sizes may have been adjusted due to voltage drop or other engineering considerations. Equipment provided by the Contractor shall be capable of accepting the quantity and sizes of conductors shown in the Contract Documents. All conductors, pigtails, cable step-down adapters, cable step-up adapters, terminal blocks and splicing materials necessary to complete the cable termination/splice shall be considered incidental to the respective pay items provided.

Cable type, size, number of conductors, strand and service voltage shall be as specified in the Contract Document.

108-2.3 Bare copper wire (counterpoise, bare copper wire ground and ground rods).

Wire for counterpoise or ground installations for airfield lighting systems shall be No. 6 AWG bare solid copper wire for counterpoise and/or No. 6 AWG insulated stranded for ground wire per ASTM B3 and ASTM B8, and shall be bare copper wire per ASTM B33. See AC 150/5340-30 for additional details about counterpoise and ground wire types and installation. For voltage powered circuits, the equipment ground conductor shall be minimum No. 6 AWG, 600V rated, Type XHHW insulated, green color, stranded copper equipment ground conductor.

Ground rods shall be copper-clad steel. The ground rods shall be of the length and diameter specified on the plans, but in no case be less than 10'-0" long and 5/8" in diameter.

108-2.4 Cable connections. In-line connections or splices of underground primary cables shall be of the type called for on the plans, and shall be one of the types listed below. No separate payment will be made for cable connections.

a. The cast splice. A cast splice, employing a plastic mold and using epoxy resin equivalent to that manufactured by 3M™ Company, "Scotchcast" Kit No. 82-B, or as manufactured by Hysol® Corporation, "Hyseal Epoxy Splice" Kit No. E1135, or an approved equivalent, used for potting the splice is acceptable.

b. The field-attached plug-in splice. Figure 3 of AC 150/5345-26, Specification for L-823 Plug and Receptacle, Cable Connectors, employing connector kits, is acceptable for field attachment to single conductor cable. It shall be the Contractor's responsibility to determine the outside diameter of the cable to be spliced and to furnish appropriately sized connector kits and/or adapters and heat shrink tubing with integral sealant.

c. The factory-molded plug-in splice. Specification for L-823 Connectors, Factory-Molded to Individual Conductors, is acceptable.

d. The taped or heat-shrink splice. Taped splices employing field-applied rubber, or synthetic rubber tape covered with plastic tape is acceptable. The rubber tape should meet the requirements of ASTM D4388 and the plastic tape should comply with Military Specification MIL-I-24391 or Commercial Item Description A-A-55809. Heat shrinkable tubing shall be heavy-wall, self-sealing tubing rated for the voltage of the wire being spliced and suitable for direct-buried installations. The tubing shall be factory coated with a thermoplastic adhesive-sealant that will adhere to the insulation of the wire being spliced forming a moisture- and dirt-proof seal. Additionally, heat shrinkable tubing for multi-conductor cables, shielded cables, and armored cables shall be factory kits that are designed for the application. Heat shrinkable tubing and tubing kits shall be manufactured by Tyco Electronics/ Raychem Corporation, Energy Division, or approved equivalent.

In all the above cases, connections of cable conductors shall be made using crimp connectors using a crimping tool designed to make a complete crimp before the tool can be removed. All L-823/L-824 splices and terminations shall be made per the manufacturer's recommendations and listings.

All connections of counterpoise, grounding conductors and ground rods shall be made by the exothermic process or approved equivalent, except that a light base ground clamp connector shall be used for attachment to the light base. See AC 150/5340-30 for additional information about methods of attaching a ground to a galvanized light base. All exothermic connections shall be made per manufacturer's recommendations and listings.

108-2.5 Splicer qualifications. Every airfield lighting cable splicer shall be qualified in making airport cable splices and terminations on cables rated at or above 5,000 volts AC. The Contractor shall submit to the Engineer proof of the qualifications of each proposed cable splicer for the airport cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

108-2.6 Concrete. Concrete for cable markers shall be per Specification Item P-610,

Structural Portland Cement Concrete.

108-2.7 Flowable backfill. Flowable material used to backfill trenches for power cable trenches shall conform to requirements of Item P-153, Controlled Low Strength Material.

108-2.8 Cable identification tags. Cable identification tags shall be made from a non-corrosive material with the circuit identification stamped or etched onto the tag. The tags shall be of the type as detailed on the plans.

108-2.9 Tape. Electrical tapes shall be Scotch™ Electrical Tapes - Scotch™ 88 (1-1/2" wide) and Scotch™ 130C® linerless rubber splicing tape (2" wide), as manufactured by the Minnesota Mining and Manufacturing Company (3M™), or an approved equivalent.

108-2.10 Electrical coating. Electrical coating shall be Scotchkote™ as manufactured by 3M™, or an approved equivalent.

108-2.11 Existing circuits. Whenever the scope of work requires connection to an existing circuit, the circuit's insulation resistance shall be tested, in the presence of the Engineer. The test shall be performed per this item and prior to any activity that will affect the respective circuit. The Contractor shall record the results on forms acceptable to the Engineer. When the work affecting the circuit is complete, the circuit's insulation resistance shall be checked again, in the presence of the Engineer. The Contractor shall record the results on forms acceptable to the Engineer. The second reading shall be equal to or greater than the first reading or the Contractor shall make the necessary repairs to the circuit to bring the second reading above the first reading. All repair costs including a complete replacement of the L-823 connectors, L-830 transformers and L-824 cable, if necessary, shall be borne by the Contractor. All test results shall be submitted in the Operation and Maintenance (O&M) Manual.

108-2.12 Detectable warning tape. Plastic, detectable, American Wood Preservers Association (AWPA) Red (electrical power lines, cables, conduit and lighting cable) with continuous legend magnetic tape shall be polyethylene film with a metalized foil core and shall be 3" - 6" wide. Detectable tape is incidental to the respective bid item.

CONSTRUCTION METHODS

108-3.1 General. The Contractor shall install the specified cable at the approximate locations indicated on the plans. Unless otherwise shown on the plans, all cable required to cross under pavements expected to carry aircraft loads shall be installed in concrete encased duct banks. Wherever possible, cable shall be run without splices, from

connection to connection.

Cable connections between lights will be permitted only at the light locations for connecting the underground cable to the primary leads of the individual isolation transformers. The Contractor shall be responsible for providing cable in continuous lengths for home runs or other long cable runs without connections unless otherwise authorized in writing by the Engineer or shown on the plans.

In addition to connectors being installed at individual isolation transformers, L-823 cable connectors for maintenance and test points shall be installed at locations shown on the plans. Cable circuit identification markers shall be installed on both sides of the L-823 connectors installed or at least once in each access point where L-823 connectors are not installed.

Provide not less than 3'-0" of cable slack on each side of all connections, isolation transformers, light units, and at points where cable is connected to field equipment. Where provisions must be made for testing or for future above grade connections, provide enough slack to allow the cable to be extended at least 1'-0" vertically above the top of the access structure. This requirement also applies where primary cable passes through empty light bases, junction boxes, and access structures to allow for future connections, or as designated by the Engineer.

Primary airfield lighting cables installed shall have cable circuit identification markers attached on both sides of each L-823 connector and on each airport lighting cable entering or leaving cable access points, such as manholes, hand holes, pull boxes, junction boxes, etc. Markers shall be of sufficient length for imprinting the cable circuit identification legend on one line, using letters not less than 1/4 " in size. The cable circuit identification shall match the circuits noted on the construction plans.

108-3.2 Installation in duct banks or conduits. This item includes the installation of the cable in duct banks or conduit per the following paragraphs. The maximum number and voltage ratings of cables installed in each single duct or conduit, and the current-carrying capacity of each cable shall be per the latest version of the National Electric Code, or the code of the local agency or authority having jurisdiction.

The Contractor shall make no connections or splices of any kind in cables installed in conduits or duct banks.

Unless otherwise designated in the plans, where ducts are in tiers, use the lowest ducts to receive the cable first, with spare ducts left in the upper levels. Check duct routes prior to

construction to obtain assurance that the shortest routes are selected and that any potential interference is avoided.

Duct banks or conduits shall be installed as a separate item per Item L-110, Airport Underground Electrical Duct Banks and Conduit. The Contractor shall run a mandrel through duct banks or conduit prior to installation of cable to ensure that the duct bank or conduit is open, continuous and clear of debris. The mandrel size shall be compatible with the conduit size. The Contractor shall swab out all conduits/ducts and clean light bases, manholes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed, the light bases and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, light bases, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be re-cleaned at the Contractor's expense. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the Engineer of any blockage in the existing ducts.

The cable shall be installed in a manner that prevents harmful stretching of the conductor, damage to the insulation, or damage to the outer protective covering. The ends of all cables shall be sealed with moisture-seal tape providing moisture-tight mechanical protection with minimum bulk, or alternately, heat shrinkable tubing before pulling into the conduit and it shall be left sealed until connections are made. Where more than one cable is to be installed in a conduit, all cable shall be pulled in the conduit at the same time. The pulling of a cable through duct banks or conduits may be accomplished by hand winch or power winch with the use of cable grips or pulling eyes. Maximum pulling tensions shall not exceed the cable manufacturer's recommendations. A non-hardening cable-pulling lubricant recommended for the type of cable being installed shall be used where required.

The Contractor shall submit the recommended pulling tension values to the Engineer prior to any cable installation. If required by the Engineer, pulling tension values for cable pulls shall be monitored by a dynamometer in the presence of the Engineer. Cable pull tensions shall be recorded by the Contractor and reviewed by the Engineer. Cables exceeding the maximum allowable pulling tension values shall be removed and replaced by the Contractor at the Contractor's expense.

The manufacturer's minimum bend radius or NEC requirements (whichever is more restrictive) shall apply. Cable installation, handling and storage shall be per manufacturer's recommendations. During cold weather, particular attention shall be paid to the manufacturer's minimum installation temperature. Cable shall not be installed when the temperature is at or below the manufacturer's minimum installation temperature. At the

Contractor's option, the Contractor may submit a plan, for review by the Engineer, for heated storage of the cable and maintenance of an acceptable cable temperature during installation when temperatures are below the manufacturer's minimum cable installation temperature.

Cable shall not be dragged across base can or manhole edges, pavement or earth. When cable must be coiled, lay cable out on a canvas tarp or use other appropriate means to prevent abrasion to the cable jacket.

108-3.3 Installation of direct-buried cable in trenches. Unless otherwise specified, the Contractor shall not use a cable plow for installing the cable. Cable shall be unreeled uniformly in place alongside or in the trench and shall be carefully placed along the bottom of the trench. The cable shall not be unreeled and pulled into the trench from one end. Slack cable sufficient to provide strain relief shall be placed in the trench in a series of S curves. Sharp bends or kinks in the cable shall not be permitted.

Where cables must cross over each other, a minimum of 3" vertical displacement shall be provided with the topmost cable depth at or below the minimum required depth below finished grade.

a. Trenching. Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored. Trenches for cables may be excavated manually or with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of surface is disturbed. Graders shall not be used to excavate the trench with their blades. The bottom surface of trenches shall be essentially smooth and free from coarse aggregate. Unless otherwise specified, cable trenches shall be excavated to a minimum depth of 18" below finished grade per NEC Table 300.5, except as follows:

(1) When off the airport or crossing under a roadway or driveway, the minimum depth shall be 36" unless otherwise specified.

(2) Minimum cable depth when crossing under a railroad track, shall be 42" unless otherwise specified.

Dewatering necessary for cable installation, erosion and turbidity control, per Federal, state, and local requirements is incidental to its respective pay items as part of Item L-108. The cost of all excavation regardless of type of material encountered, shall be included in the unit price bid for the L-108 Item.

The Contractor shall excavate all cable trenches to a width not less than 6". Unless otherwise specified on the plans, all cables in the same location and running in the same general direction shall be installed in the same trench.

When rock is encountered, the rock shall be removed to a depth of at least 3" below the required cable depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4" sieve. Flowable backfill material may alternatively be used. The Contractor shall ascertain the type of soil or rock to be excavated before bidding. All such rock removal shall be performed and paid for under Item P-152.

Duct bank or conduit markers temporarily removed for trench excavations shall be replaced as required.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

(1) Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred.

(2) Trenching, etc., in cable areas shall then proceed, with approval of Engineer, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair or replacement.

b. Backfilling. After the cable has been installed, the trench shall be backfilled. The first layer of backfill in the trench shall be 3" deep, loose measurement, and shall be either earth or sand containing no mineral aggregate particles that would be retained on a 1/4" sieve. This layer shall not be compacted. The second layer shall be 5" deep, loose measurement, and shall contain no particles that would be retained on a 1" sieve. The remaining third and subsequent layers of backfill shall not exceed 8" of loose measurement and be excavated or imported material and shall not contain stone or aggregate larger than 4" maximum diameter.

The second and subsequent layers shall be thoroughly tamped and compacted to at least the density of the adjacent undisturbed soil, and to the satisfaction of the Engineer. If necessary to obtain the desired compaction, the backfill material shall be moistened or aerated as required.

If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the compaction requirements per Item P-152 for that area shall be followed.

Trenches shall not contain pools of water during backfilling operations. The trench shall be completely backfilled and tamped level with the adjacent surface, except that when turf is to be established over the trench, the backfilling shall be stopped at an appropriate depth consistent with the type of turving operation to be accommodated. A proper allowance for settlement shall also be provided. Any excess excavated material shall be removed and disposed of per the plans and specifications.

Underground electrical warning (caution) tape shall be installed in the trench above all direct-buried cable. Contractor shall submit a sample of the proposed warning tape for acceptance by the Engineer. If not shown on the plans, the warning tape shall be located 6" above the direct-buried cable or the counterpoise wire if present. A 4" - 6" wide polyethylene film detectable tape, with a metalized foil core, shall be installed above all direct buried cable or counterpoise. The tape shall be of the color and have a continuous legend as indicated on the plans. The tape shall be installed 8" minimum below finished grade.

c. Restoration. Following restoration of all trenching near airport movement surfaces, the Contractor shall visually inspect the area for foreign object debris (FOD) and remove any that is found. Where soil and sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by work shall be restored to its original condition. The restoration shall include the [sodding] [topsoiling] [fertilizing] [liming] [seeding] [sprigging] [mulching] as shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. When trenching is through paved areas, restoration shall be equal to existing conditions and compaction shall meet the requirements of Item P-152. Restoration shall be considered incidental to the pay item of which it is a component part.

108-3.4 Cable markers for direct-buried cable. The location of direct buried circuits shall be marked by a concrete slab marker, 2'-0" square and 4" - 6" thick, extending approximately 1" above the surface. Each cable run from a line of lights and signs to the equipment vault shall be marked at approximately every 200'-0" along the cable run, with an additional marker at each change of direction of cable run. All other direct-buried cable shall be marked in the same manner. Cable markers shall be installed directly above the cable. The Contractor shall impress the word "CABLE" and directional arrows on each cable marking slab. The letters shall be approximately 4" high and 3" wide, with width of stroke 1/2" and 1/4" deep.

At location of each underground cable connection, except at lighting units, or isolation transformers, or power a concrete marker slab must mark adapters placed above the connection. Contractor shall impress the word "SPlice" on each slab. Contractor also shall impress additional circuit identification symbols on each slab as directed by the Engineer. All cable markers and splice markers shall be painted international orange. Paint shall be specifically manufactured for uncured exterior concrete. After placement, all cable or splice markers shall be given one coat of high-visibility aviation orange paint as approved by the Engineer. Furnishing and installation of cable markers is incidental to the respective cable pay item.

108-3.5 Splicing. Connections of the type shown on the plans shall be made by experienced personnel regularly engaged in this type of work and shall be made as follows:

a. Cast splices. These shall be made by using crimp connectors for jointing conductors. Molds shall be assembled, and the compound shall be mixed and poured per the manufacturer's instructions and to the satisfaction of the Engineer.

b. Field-attached plug-in splices. These shall be assembled per the manufacturer's instructions. These splices shall be made by plugging directly into mating connectors. In all cases the joint where the connectors come together shall be wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2" on each side of the joint.

c. Factory-molded plug-in splices. These shall be made by plugging directly into mating connectors. In all cases, the joint where the connectors come together shall be wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2" on each side of the joint.

d. Taped or heat-shrink splices. A taped splice shall be made in following manner:

Bring the cables to their final position and cut so that the conductors will butt. Remove insulation and jacket allowing for bare conductor of proper length to fit compression sleeve connector with 1/4" of bare conductor on each side of the connector. Prior to splicing, the two ends of the cable insulation shall be penciled using a tool designed specifically for this purpose and for cable size and type. Do not use emery paper on splicing operation since it contains metallic particles. The copper conductors shall be thoroughly cleaned. Join the conductors by inserting them equidistant into the compression connection sleeve. Crimp conductors firmly in place with crimping tool that

requires a complete crimp before tool can be removed. Test the crimped connection by pulling on the cable. Scrape the insulation to assure that the entire surface over which the tape will be applied (plus 3" on each end) is clean. After scraping wipe the entire area with a clean lint-free cloth. Do not use solvents.

Apply high-voltage rubber tape one-half lapped over bare conductor. This tape should be tensioned as recommended by the manufacturer. Voids in the connector area may be eliminated by highly elongating the tape, stretching it just short of its breaking point. Throughout the rest of the splice less tension should be used. Always attempt to exactly half-lap to produce a uniform buildup. Continue buildup to 1-1/2" cable diameter over the body of the splice with ends tapered a distance of approximately 1" over the original jacket. Cover rubber tape with two layers of vinyl pressure-sensitive tape one-half lapped. Do not use glyptol or lacquer over vinyl tape as they react as solvents to the tape. No further cable covering or splice boxes are required.

Heat shrinkable tubing shall be installed following manufacturer's instructions. Direct flame heating shall not be permitted unless recommended by the manufacturer. Cable surfaces within the limits of the heat-shrink application shall be clean and free of contaminants prior to application.

Surfaces of equipment or conductors being terminated or connected shall be prepared in accordance with industry standard practice and manufacturer's recommendations. All surfaces to be connected shall be thoroughly cleaned to remove all dirt, grease, oxides, nonconductive films, or other foreign material. Paints and other nonconductive coatings shall be removed to expose base metal. Clean all surfaces at least 1/4" beyond all sides of the larger bonded area on all mating surfaces. Use a joint compound suitable for the materials used in the connection. Repair painted/coated surface to original condition after completing the connection.

108-3.6 Bare counterpoise wire installation for lightning protection and grounding. If shown on the plans or included in the job specifications, bare solid #6 AWG copper counterpoise wire shall be installed for lightning protection of the underground cables. The Engineer shall select one of two methods of lightning protection for the airfield lighting circuit based on the frequency of local lightning:

a. Equipotential. May be used by the Engineer for areas that have high rates of lightning strikes. This is where the counterpoise is bonded to the light base (edge lights included) and counterpoise size is determined by the Engineer.

b. Isolation. May be used in areas where lightning strikes are not common. The

counterpoise is not bonded to edge light fixtures, in-pavement fixtures are bonded to the counterpoise. Counterpoise size is selected by the Engineer.

Counterpoise wire shall be installed in the same trench for the entire length of buried cable, conduits and duct banks that are installed to contain airfield cables.

For edge light fixtures installed in turf (stabilized soils) and for raceways or cables adjacent to the full strength pavement edge, the counterpoise conductor shall be installed halfway between the pavement edge and the light base, mounting stake, raceway, or cable.

The counterpoise conductor shall be installed 8" minimum below grade. Each light base or mounting stake shall be provided with a grounding electrode.

When a metallic light base is used, the grounding electrode shall be bonded to the metallic light base or mounting stake with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

When a nonmetallic light base is used, the grounding electrode shall be bonded to the metallic light fixture or metallic base plate with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

For raceways installed under pavement; for raceways and cables not installed adjacent to the full strength pavement edge; for fixtures installed in full strength pavement and shoulder pavement and for optional method of edge lights installed in turf (stabilized soils); and for raceways or cables adjacent to the full strength pavement edge, the counterpoise conductor shall be centered over the raceway or cable to be protected as described below.

The counterpoise conductor shall be installed no less than 8" above the raceway or cable to be protected, except as permitted below.

The minimum counterpoise conductor height above the raceway or cable to be protected shall be permitted to be adjusted subject to coordination with the airfield lighting and pavement designs.

Where raceway is installed by the directional bore, jack and bore, or other drilling method, the counterpoise conductor shall be permitted to be installed concurrently with the directional bore, jack and bore, or other drilling method raceway, external to the raceway or sleeve.

The counterpoise conductor shall be installed no more than 12" above the raceway or

cable to be protected.

The counterpoise conductor height above the protected raceway(s) or cable(s) shall be calculated to ensure that the raceway or cable is within a 45-degree area of protection.

The counterpoise conductor shall be bonded to each metallic light base, mounting stake, and metallic airfield lighting component.

All metallic airfield lighting components in the field circuit on the output side of the constant current regulator (CCR) or other power source shall be bonded to the airfield lighting counterpoise system.

The counterpoise wire shall also be exothermically welded to ground rods installed as shown on the plans but not more than 500'-0" apart around the entire circuit. The counterpoise system shall be continuous and terminate at the transformer vault or at the power source. It shall be securely attached to the vault or equipment external ground ring or other made electrode-grounding system. The connections shall be made as shown on the plans and in the specifications.

If shown on the plans or in the specifications, a separate equipment (safety) ground system shall be provided in addition to the counterpoise wire using one of the following methods:

c. A ground rod installed at and securely attached to each light fixture base, mounting stake, and to all metal surfaces at junction/access structures via #6 AWG wire.

d. For parallel voltage systems only, install a #6 AWG green insulated equipment ground conductor internal to the conduit system and securely attached it to each light fixture base internal grounding lug and to all metal surfaces at junction/access structures. Dedicated ground rods shall be installed and exothermically welded to the counterpoise wires at each end of a duct bank crossing under pavement.

Where an existing airfield lighting system is being extended or modified, the new counterpoise conductors shall be interconnected to existing counterpoise conductors at each intersection of the new and existing airfield lighting counterpoise systems.

108-3.7 Counterpoise installation above multiple conduits and duct banks. Counterpoise wires shall be installed above multiple conduits/duct banks for airfield lighting cables, with the intent being to provide a complete area of protection over the airfield lighting cables. When multiple conduits and/or duct banks for airfield cable are installed in the same trench, the number and location of counterpoise wires above the conduits shall be

adequate to provide a complete cone of protection measured 22-1/2 degrees each side of vertical.

Where duct banks pass under pavement to be constructed in the project, the counterpoise shall be placed above the duct bank. Reference details on the construction plans.

108-3.8 Counterpoise installation at existing duct banks. When airfield lighting cables are indicated on the plans to be routed through existing duct banks, the new counterpoise wiring shall be terminated at ground rods at each end of the existing duct bank where the cables being protected enter and exit the duct bank. The new counterpoise conductor shall be bonded to the existing counterpoise system.

108-3.9 Exothermic bonding. Bonding of counterpoise wire shall be by the exothermic welding process. Only personnel experienced in and regularly engaged in this type of work shall make these connections.

Contractor shall demonstrate to the satisfaction of the Engineer, the welding kits, materials and procedures to be used for welded connections prior to any installations in the field. The installations shall comply with the manufacturer's recommendations and the following:

a. All slag shall be removed from welds.

b. Using an exothermic weld to bond the counterpoise to a lug on a galvanized light base is not recommended unless the base has been specially modified. Consult the manufacturer's installation directions for proper methods of bonding copper wire to the light base. See also AC 150/5340-30 for galvanized light base exception.

c. If called for in the plans, all buried copper and weld material at weld connections shall be thoroughly coated with 6 mm of 3M™ Scotchkote™, or approved equivalent, or coated with coal tar Bitumastic® material to prevent surface exposure to corrosive soil or moisture.

108-3.10 Testing. The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits before and after installation. The Contractor shall perform all tests in the presence of the Engineer. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the Engineer. All costs for testing are incidental to the respective item being tested. For phased projects, the tests must be completed by phase. The Contractor must maintain the test results throughout the entire project as well as during the warranty period that meet the following:

a. Earth resistance testing methods shall be submitted to the Engineer for approval. Earth resistance testing results shall be recorded on an approved form and testing shall be performed in the presence of the Engineer. All such testing shall be at the sole expense of the Contractor.

b. Should the counterpoise or ground grid conductors be damaged or suspected of being damaged by construction activities the Contractor shall test the conductors for continuity with a low resistance ohmmeter. The conductors shall be isolated such that no parallel path exists and tested for continuity. The Engineer shall approve of the test method selected. All such testing shall be at the sole expense of the Contractor. After installation, the Contractor shall test and demonstrate to the satisfaction of the Engineer the following:

c. That all affected lighting power and control circuits (existing and new) are continuous and free from short circuits.

d. That all affected circuits (existing and new) are free from unspecified grounds.

e. That the insulation resistance to ground of all new non-grounded high voltage series circuits or cable segments is not less than [_____] megohms.

f. That the insulation resistance to ground of all new non-grounded conductors of new multiple circuits or circuit segments is not less than 100 megohms.

g. That all affected circuits (existing and new) are properly connected per applicable wiring diagrams.

h. That all affected circuits (existing and new) are operable. Tests shall be conducted that include operating each control not less than 10 times and the continuous operation of each lighting and power circuit for not less than 1/2 hour.

i. That the impedance to ground of each ground rod does not exceed 25 ohms prior to establishing connections to other ground electrodes. The fall-of-potential ground impedance test shall be used, as described by American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81, to verify this requirement. As an alternate, clamp-on style ground impedance test meters may be used to satisfy the impedance testing requirement. Test equipment and its calibration sheets shall be submitted for review and approval by the Engineer prior to performing the testing.

Two copies of tabulated results of all cable tests performed shall be supplied by the Contractor to the Engineer. Where connecting new cable to existing cable, ground resistance tests shall be performed on the new cable prior to connection to the existing circuit.

There are no approved "repair" procedures for items that have failed testing other than complete replacement.

METHOD OF MEASUREMENT

108-4.1 Trenching shall be measured by the linear feet of trench, including the excavation, backfill, and restoration, completed, measured as excavated, and accepted as satisfactory. When specified, separate measurement shall be made for trenches of various specified widths.

108-4.2 Cable or counterpoise wire installed in trench, duct bank or conduit shall be measured by the number of linear feet installed and grounding connectors, and trench marking tape ready for operation, and accepted as satisfactory. Separate measurement shall be made for each cable or counterpoise wire installed in trench, duct bank or conduit. The measurement for this item shall not include additional quantities required for slack.

108-4.3 Ground rods shall be measured by each 10'-0" section installed complete.

BASIS OF PAYMENT

108-5.1 Payment will be made at the contract unit price for trenching, cable and bare counterpoise wire installed in trench (direct-buried), or cable and equipment ground installed in duct bank or conduit, in place by the Contractor and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals, including ground rods and ground connectors and trench marking tape, necessary to complete this item.

Payment will be made under:

- | | |
|------------|---|
| Item L-108 | No. 8 AWG, 5 kV, L-824, Type C Cable, Installed in Trench, Duct Bank or Conduit - per linear foot |
| Item L-108 | No. 6 AWG, Solid, Bare Counterpoise Wire, Installed in Trench, Above the Duct Bank or Conduit, Including Ground Rods and Ground Connectors - per linear foot. |

MATERIAL REQUIREMENTS

AC 150/5340-26 - Maintenance of Airport Visual Aid Facilities

AC 150/5340-30 - Design and Installation Details for Airport Visual Aids

AC 150/5345-7 - Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits

AC 150/5345-26 - Specification for L-823 Plug and Receptacle, Cable Connectors

AC 150/5345-53 - Airport Lighting Equipment Certification Program Commercial Item Description A-A-59544 Cable and Wire, Electrical (Power, Fixed Installation), Commercial Item Description A-A-55809 Insulation Tape, Electrical, Pressure-Sensitive Adhesive, Plastic

ASTM B3 - Standard Specification for Soft or Annealed Copper Wire

ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft

ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes

ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes

FED SPEC J-C-30 - Cable and Wire, Electrical (Power, Fixed Installation)

MIL-I-24391 - Insulation Tape, Electrical, Plastic, Pressure Sensitive

REFERENCE DOCUMENTS

NFPA-70 - National Electrical Code (NEC)

NFPA-780 - Standard for the Installation of Lightning Protection Systems

MIL-S-23586F - Performance Specification: Sealing Compound (with Accelerator), Silicone Rubber, Electrical

ANSI/IEEE STD 81 - IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System

END OF SPECIFICATION L-108

**SPECIFICATION L-125
INSTALLATION OF AIRPORT LIGHTING SYSTEMS**

DESCRIPTION

125-1.1 REQUIREMENTS.

- a.** The electrical installation shall meet the National Electrical Code (NEC) and local regulations. The Contractor shall be responsible for obtaining local permits and notification for inspection by code authorities consistent with the schedule of work.

- b.** The Contractor shall determine that all lighting system components furnished (including FAA approved equipment) are compatible with each other and the remainder of the new or expanded system. Non-compatible components furnished by the Contractor shall be replaced by the Contractor with similar compatible units meeting the requirements of the contract documents at Contractor's expense.

- c.** If Contractor elects to furnish & install airport lighting equipment requiring additional wiring, transformers, adapters, mountings, etc., to those shown on drawings and/or listed in the specifications, any cost for these items shall be incidental to the equipment cost.

- d.** Only the specified type, style, class, and so forth, of FAA approved equipment, when indicated in the plans or specifications, will be acceptable even though equipment of other types, styles, classes, etc. may be FAA approved. FAA approved, as used herein, means approved under the Airport Lighting Equipment Certification Program described in Advisory Circular (AC) 150/5345-53, Appendices 3 and 4, current Addendum.

- e.** All airfield lighting fixtures shall have been manufactured and shall perform in accordance with the most recent applicable FAA AC 150/5345-46 specification. Any defect in design, materials (excluding lamps), or workmanship which may occur during proper and normal use shall be warranted for a period of three (3) years from date of installation. This warranty specifically must include warrants against water leakage, damage, and corrosion to the lamps, electrical connections, and optical elements internal to the luminaire. Any above mentioned defect requires the manufacturer to repair or replace, at its option, the defective part(s) or entire fixture at no additional cost.

All other equipment shall be guaranteed free from defects in manufacturing, workmanship, and materials for a period of 12 months from placement into service. Also, signs and other equipment installed on the airfield must be able to withstand aircraft environment (jet blast). Equipment shall be repaired or replaced if proven to be other than as guaranteed, at no additional cost.

125-1.2 WORK INCLUDED. This item shall consist of all lighting systems and fixture identification furnished and installed in accordance with the project plans and specifications and applicable advisory circulars.

a. The systems shall be installed at the locations and in accordance with the dimensions, design and details shown on plans. It is the intent and meaning of the plans and specifications that the Contractor shall provide an electrical installation that is complete, including all items and appurtenances necessary, reasonably incidental or customarily included, even though each and every item is not specifically called out or shown.

b. Installations and construction under these provisions shall be coordinated with the Engineer. Specification requirements for approvals, reviews or other involvement of the Engineer shall be transmitted by the Contractor to the Engineer.

c. Additional details pertaining to a specific system covered in this item are contained in the current edition of the advisory circulars listed herein:

AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits

AC 150/5340-24, Runway and Taxiway Edge Lighting System.

AC 150/5340-18F, Standards for Airport Sign Systems.

AC 150/5345-26D, Specification for L-823, Plug and Receptacle, Cable Connectors

AC 150/5340-30G, Design and Installation Details for Airport Visual Aids

AC 150/5345-42F, Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories

AC 150/5345-44J, Specification for Taxiway and Runway Signs

AC 150/5345-46D, Specification for Runway and Taxiway Light Fixtures

AC 150/5345-47C, Specification for Series to Series Isolation Transformers for Airport Lighting Systems

AC 150/5345-28G, Specification for Precision Approach Path Indicator (PAPI) Systems

AC 150/5345-53 Airport Lighting Equipment Certification Program

AC 150/5370-10 Standards for Specifying Construction of Airports

The Contractor is required to obtain prior to construction of any electrical item and keep on site the above advisory circulars (AC's). These AC's can be obtained from the US Department of Transportation, General Services Section, M-443.2, Washington, DC 20590, or can be downloaded from the FAA Airports web site.

EQUIPMENT AND MATERIALS

125-2.1 GENERAL. Airport lighting equipment and materials covered by FAA Specifications shall be approved under the Airport Lighting Equipment Certification Program described in Advisory Circular (AC) 150/5345-53, Appendices 3 and 4 of the current Addendum.

All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the Engineer.

Light fixtures and lamps specified shall be low wattage and energy efficient, unless noted otherwise. All lamps for light fixtures shall be quartz lamps unless indicated otherwise on the drawings. Sign lamps shall be quartz, unless noted otherwise.

Shop drawings and catalog cuts of each lighting and cable component, indicating FAA approval, shall be submitted for approval and approved prior to ordering any materials for this section. The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the contract documents. Shop drawings and instructions shall be submitted 30 days prior to shipment for review and, as a minimum, shall include the following:

- a. Complete description, including drawings as required, illustrating installation.
- b. Bolt pattern information for fixture bases.
- c. Light fixture base can dimensions.
- d. Isolation transformer ratings.
- e. Control and/or power wiring schematics.
- f. Maintenance and repair instructions, including spare parts list.

The Engineer reserves the right to reject any equipment which, in the Engineer's opinion, does not meet the system design and the standards and codes specified herein.

125-2.2 EQUIPMENT AND MATERIALS COMMON TO ALL SYSTEMS.

Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall be ETL certified and listed under Advisory Circular (AC) 150/5345-53, Airport Lighting Equipment Certification Program. Certain items of airport lighting systems are covered by individual FAA equipment specifications. These specifications are listed below. The Contractor shall furnish copies of Certification from an approved independent testing laboratory that the equipment proposed has been satisfactorily tested and is in compliance with the applicable FAA specifications. All equipment shall be

furnished by manufacturers who have been continuously engaged in the manufacture of the products proposed for a minimum period of three (3) consecutive years immediately preceding the bid date.

- a. Primary Cable.** Primary cable shall be as specified in Item L-108.
- b. Counterpoise and Ground Wire.** Counterpoise and ground wire shall be as specified in Item L-108.
- c. Isolation Transformers.** Isolation transformers shall be of rating compatible with associated light fixture or sign and shall conform to requirements of AC 150/5345-47. The isolation transformers are considered part of the light fixture or sign and no separate payment shall be made for the isolation transformer.
- d. Light Bases.** Provide L-867 Class IA bases or otherwise as shown on the plans. Certain applications shall require additional entrance hubs as shown on the plans. All fixture mounting holes in base top shall be drilled completely through and then tapped. Coordinate bolt hole patterns for bases with fixtures to be installed.
- e. Connectors.** L-823 connectors used to splice the L-824 primary cables shall be as specified in Item L-108. Fixtures shall be provided with the appropriate number of connecting lead plugs.
- f. Concrete.** Concrete shall conform to P-610, Structural Portland Cement Concrete, using 1" maximum size aggregate.
- g. Sealer Materials.** Materials used shall conform to applicable requirements of Item P-605. Submit materials with satisfactory adhesive and waterproofing qualities for approval through the Engineer.
- g. Fixture Hold Down Bolts.** Fixture hold down bolts and installations shall adhere to the following requirements: Bolts shall be all-thread, 18-8, Type 304 stainless steel. Bolts information shall be submitted for approval of the Engineer. Submittal shall specifically identify, as a minimum, the bolt material, dimensions, and threading. Bolt material shall be readily identifiable in the field by appropriate ASTM markings on the bolts or by having material identified on bolt packaging, as approved through the Engineer. Bolts shall receive anti-seize compound prior to the final turn.
- h. Guidance Signs.** AC 150/5345-44 (current edition), Engineering Brief 67 (latest edition). FAA Type L-858Y, L-858R or L-858L, Size 2, Style 2
- i. Medium intensity taxiway lights.** AC 150/5345-46D, Engineering Brief 67 (latest edition). FAA Type L-861T with 30W, 6.6 amp quartz fixture and mounting kit, and no heater. Provide colored prismatic globes or filters. Non-metallic bodies are

not acceptable.

CONSTRUCTION METHODS

125-3.1 GENERAL. Install conduit, cables, counterpoise and supports necessary to insure a complete and operable electrical installation for lighting systems as specified and shown on the plans.

a. Applicable Codes and Specifications. Install and mount the equipment to comply with the requirements of the NEC and Item L-108 of these specifications.

b. General Light Base (Transformer Housing) Installation Requirements. Caution shall be exercised during light base installation to prevent the collection of foreign matter in equipment and on operating components. All installation residues shall be collected as installation progresses. As directed by Engineer, a cover shield shall be used to protect components from foreign matter during installation.

Light base shall be installed with connecting conduit as shown on the plans. Light bases shall be set level. Leveling jig shall be required as specified and as directed by the Engineer.

Flexible, sealtight steel conduit may be used where shown on the plans. A maximum length of 2'-0" of flexible, sealtight steel conduit can be installed at the connection point to fixture base cans.

Light bases shall have one, two or more 2" threaded metallic hubs for all required conduit entrances, unless otherwise shown on the plans. Grommeted conduit entrances are strictly prohibited except where shown on the plans. The cable entrance hubs shall be oriented in the proper direction to align with the connecting conduit.

Stub-in conduit connections into existing light bases shall be Meyers Hub installation where required on the plans and as noted on plan details.

Breakage of fixture hold down bolts normally and regularly occurs in the field during fixture removal or fixture installation. When breakage occurs, the Contractor shall adhere to the following requirements:

- (1) The Contractor shall submit a broken removal process for approval of the Engineer. Submittal shall include information about the planned broken bolt removal process and jig required to effectively drill and tap broken bolts, when necessary.
- (2) Whenever encountered, broken bolts shall be removed. Where drilling and tapping is required, a jig approved for use by the Engineer shall be used. All broken bolts shall be replaced with 3/8" stainless steel bolts. In

the event that light bases are permanently damaged in the course of removing broken bolts, the Contractor shall be responsible for the immediate repair/replacement of the lighting base. Permanent damage includes drilling of holes which exceed the required 3/8" bolt diameter and/or any "off centered" impressions that penetrate the inner lip of the existing bolt holes.

- (3) Use of "helicoils" is prohibited as a method of dealing with stripped bolt holes, unless specifically approved in extreme emergency conditions by the Engineer.

All light bases shall be cleaned prior to the installation of equipment for their final use. Cleaning shall include compressed air cleansing of the top flange prior to mounting either light fixtures, or blank covers, or base plates on light bases at signs.

c. General Cable Installation Requirements. The primary cable shall enter the light base and transformer housing as shown on the plans.

Primary cable slack shall be provided inside the light fixture base as specified in Item L-108. In general, enough slack shall be left in the cable to permit installation aboveground of the connections between the primary cable and the isolating transformer primary leads. A similar length of primary cable slack shall be provided for any unconnected cable installed in a fixture base can.

When more than one (1) circuit is installed within the lighting base, each cable shall bear its appropriate circuit identification marker.

The transformer secondary leads shall be connected to the lamp leads with a disconnecting plug and receptacle. The secondary connection shall not be taped; the cable connections to the isolating transformer's leads shall be made as specified in Item L-108.

Ends of cables shall be sealed with heat shrinkable tubing until the splice is made to prevent the entrance of moisture.

d. General Base and Light Fixture Toe-In Requirements. On curved sections of taxiway Contractor shall orient the axis of a unidirectional centerline light beam to intersect the taxiway true centerline path at a point equal to four times the light spacing on the curve. Measure this spacing along the chord of the curve. Orient the axis of bidirectional centerline light beams parallel to the tangent of the nearest point of the curve designated as the taxiway true centerline path. On straight sections of taxiway centerlines, the axis of the light beam shall be parallel to the centerline of the taxiway centerline path. Contractor shall submit its written installation method to Engineer for approval prior to installation to assure the proper alignment.

125-3.2 LIGHT FIXTURE INSTALLATION IN SHOULDER AREAS.

a. Light Base Installation Requirements. Install light bases in accordance with the general requirements noted in paragraph 125-3.1 and as shown on the plans.

Concrete shall be placed around the outside of the base as shown on the plans.

Provide each fixture with an identification number in accordance with the plans.

The Contractor may use alternate methods of installations, only if approved in writing by the Engineer. The placement of conduit prior to subgrade completion and setting of bases after placement of bituminous courses will **not** be allowed. Submit planned installation process for approval of the Engineer.

b. Light Fixtures. Assemble the light fixture in accordance with the manufacturer's instructions.

Connect the secondary leads of the transformer to the fixture leads with a disconnecting plug and receptacle conforming to AC 150/5345-26 without taping the joint. Install a lamp of the proper rating in the fixture. For elevated fixtures, do not extend the shearing groove of the breakable coupling more than 3-1/2" above finished grade. Level each elevated fixture as recommended by the manufacturer to within 1 degree.

125-3.3 INSPECTION AND TESTING. Before modifying any series circuit, verify the performance of the existing circuit by checking the supply voltage to the regulator and measuring the output current from the regulator on all brightness steps under existing load. Check cable connections and perform electrical tests on cable as specified in Item L-108.

Because certain components may be inaccessible after final installation, lighting shall be tested concurrently with installation. Any system installation errors or unacceptable discrepancies of installation shall be corrected, as directed by Engineer and to the satisfaction of the Engineer.

a. Elevation and Alignment. Light unit installation procedures shall be checked during construction and after the system has been completed to determine that the recommended fixture elevation and alignment is in accordance with design and manufacturer's installation requirements.

b. Securing Screws or Bolts. All fixture securing screws or bolts shall be tightened in accordance with the manufacturer's recommendations.

c. Light Channels and Lenses. Each light fixture shall be checked to determine that the lenses and the channels in front of the lenses are clean and that the glassware is properly oriented.

d. Cables, Wiring, Splices and Ducts. All cables, wiring, and splices shall be tested in accordance with Item L-108. All ducts and duct markers shall be checked to determine that the installation is in accordance with the plans and specifications. Underground ducts shall be inspected before installation is completed.

METHOD OF MEASUREMENT

125-4.1 The measurement of items to be modified as specified on the plans, shall be the number per each for each type of item removed, stored, and reinstalled, as completed units in place, ready for use, and accepted by the Engineer.

BASIS OF PAYMENT

125-5.1 Payment will be made at the contract unit price for each complete stake mounted edge light unit adjusted vertically as shown on the lighting plan. Existing fixture and light to be reused up to stake mounting. Contractor shall provide new stake and concrete anchor, then reattach the existing fixture to the new stake. Price shall include all labor, equipment, tools, and incidentals to complete this item. Price shall include any necessary cable, L-823 connectors, frangible couplings, and isolation transformers required to make the vertical adjustment of the light fixture.

Payment will be made under:

L-125-1 - L-861T - Remove and Relocate Stake Mounted Medium Intensity Taxiway Edge Light - per each.

L-125-2 - L-861T - New Base Mounted Medium Intensity Taxiway Edge Light - per each.

L-125-3 - L-861T - New Stake Mounted Medium Intensity Taxiway Edge Light - per each

L-125-4 - Guidance Sign, L-858, Two Module (Complete) - per each

L-125-5 – Guidance Sign, L-858, Three Module (Complete) – per each

L-125-6 – Replacement Face, Size 2, 1 module – per each

L-125-7 – Replacement Face, Size 2, 2 module – per each

L-125-8 – Blank Panel, Size 2 – per each

MATERIAL REQUIREMENTS

<u>Number</u>	<u>Title</u>
WW-C-581	Conduit, Metal, Rigid; and Coupling, Elbow; and Nipple, Electrical Conduit; Zinc-Coated.

FAA SPECIFICATIONS REFERENCED IN ITEM L-125

Number	Title
AC 150/5340-24	Runway and Taxiway Edge Lighting System
AC 150/5340-18F	Taxiway Guidance Sign System
AC 150/5345-12E	Specification for Airport and Heliport Beacon
AC 150/5345-26D	Specification for L-823 Plug and Receptacle, Connectors, Cable
AC 150/5345-30G	Design and Installation Details for Airport Visual Aids
AC 150/5345-42F	Specification for Airport Light Base and Transformer Housings
AC 150/5345-44J	Specification for Taxiway and Runway Signs
AC 150/5345-46D	Specification for Runway and Taxiway Light Fixtures
AC 150/5345-47C	Specification for Series to Series Isolation Transformers for Airport Lighting Systems

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DIVISION V

APPENDICES

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APPENDIX

A

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Errata Sheet for

Advisory Circular 150/5370-2F, Operational Safety on Airports During Construction

Last Update: October 14, 2011

This errata sheet logs content and/or coding errors identified after the AC was signed on September 29, 2011. These errors have been corrected in the PDF version of the AC available on the FAA website.

#	Description of Correction	Location	Rationale	Date Error Corrected
1	Replaced Figure 2-2.	Page 20.	Original drawing showed runway centerline in yellow. New drawing shows correct runway centerline drawn in white.	10/14/2011

Advisory Circular

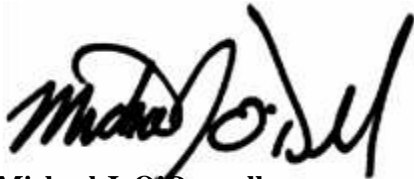
Subject: Operational Safety on Airports During Construction

Date: 9/29/11

Initiated by: AAS-100

AC No: 150/5370-2F

- 1. Purpose.** This AC sets forth guidelines for operational safety on airports during construction.
- 2. What this AC Cancels.** This AC cancels AC 150/5370-2E, Operational Safety on Airports During Construction, dated January 17, 2003.
- 3. Whom This AC Affects.** This AC assists airport operators in complying with Title 14 Code of Federal Regulations (CFR) Part 139, Certification of Airports (Part 139). For those certificated airports, this AC provides one way, but not the only way, of meeting those requirements. The use of this AC is mandatory for those airport construction projects receiving funds under the Airport Improvement Program (AIP) or the Passenger Facility Charge (PFC) Program. See Grant Assurance No. 34, "Policies, Standards, and Specifications," and PFC Assurance No. 9, "Standard and Specifications." While we do not require non-certificated airports without grant agreements to adhere to these guidelines, we recommend that they do so to help these airports maintain operational safety during construction.
- 4. Principal Changes.**
 - a. Construction activities are prohibited in safety areas while the associated runway or taxiway is open to aircraft.
 - b. Guidance is provided in incorporating Safety Risk Management.
 - c. Recommended checklists are provided for writing Construction Safety and Phasing Plans and for daily inspections.
- 5. Reading Material Related to this AC.** Numerous ACs are referenced in the text of this AC. These references do not include a revision letter, as they are to be read as referring to the latest version. Appendix 1 contains a list of reading material on airport construction, design, and potential safety hazards during construction, as well as instructions for obtaining these documents.



Michael J. O'Donnell
Director of Airport Safety and Standards

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Chapter 1. Planning an Airfield Construction Project

101. Overview. Airports are complex environments, and procedures and conditions associated with construction activities often affect aircraft operations and can jeopardize operational safety. Safety considerations are paramount and may make operational impacts unavoidable. However, careful planning, scheduling, and coordination of construction activities can minimize disruption of normal aircraft operations and avoid situations that compromise the airport's operational safety. The airport operator must understand how construction activities and aircraft operations affect one another to be able to develop an effective plan to complete the project. While the guidance in this AC is primarily used for construction operations, some of the concepts, methods and procedures described may also enhance the day-to-day airport maintenance operations, such as lighting maintenance and snow removal operations.

102. Plan for Safety. Safety, maintaining aircraft operations, and construction costs are all interrelated. Since safety must not be compromised, the airport operator must strike a balance between maintaining aircraft operations and construction costs. This balance will vary widely depending on the operational needs and resources of the airport and will require early coordination with airport users and the FAA. As the project design progresses, the necessary construction locations, activities, and associated costs will be identified. As they are identified, their impact to airport operations must be assessed. Adjustments are made to the proposed construction activities, often by phasing the project, and/or to airport operations in order to maintain operational safety. This planning effort will ultimately result in a project Construction Safety and Phasing Plan (CSPP). The development of the CSPP takes place through the following five steps:

a. Identify Affected Areas. The airport operator must determine the geographic areas on the airport affected by the construction project. Some, such as a runway extension, will be defined by the project. Others may be variable, such as the location of haul routes and material stockpiles.

b. Describe Current Operations. Identify the normal airport operations in each affected area for each phase of the project. This becomes the baseline from which the impact on operations by construction activities can be measured. This should include a narrative of the typical users and aircraft operating within the affected areas. It should also include information related to airport operations: the Aircraft Reference Code (ACRC) for each runway; Airplane Design Group (ADG) and Taxiway Design Group (TDG)¹ for each affected taxiway; designated approach visibility minimums; available approach and departure procedures; most demanding aircraft; declared distances; available air traffic control services; airport Surface Movement Guidance and Control System plan; and others. The applicable seasons, days and times for certain operations should also be identified as applicable.

c. Allow for Temporary Changes to Operations. To the extent practical, current airport operations should be maintained during the construction. In consultation with airport users, Aircraft Rescue and Fire Fighting (ARFF) personnel, and FAA Air Traffic Organization (ATO) personnel, the airport operator should identify and prioritize the airport's most important operations. The construction activities should be planned, through project phasing if necessary, to safely accommodate these operations. When construction activities cannot be adjusted to safely maintain current operations, regardless of their importance, then the operations must be revised accordingly. Allowable changes include temporary revisions to approach procedures, restricting certain aircraft to specific runways and taxiways, suspension of certain operations, decreased weights for some aircraft due to shortened runways, and other changes. An example of a table showing temporary operations versus current operations is shown in Table 3-1 Sample Operations Effects.

¹ Taxiway Design Group will be introduced in AC 150/5300-13A.

d. Take Required Measures to Revised Operations. Once the level and type of aircraft operations to be maintained are identified, the airport operator must determine the measures required to safely conduct the planned operations during the construction. These measures will result in associated costs, which can be broadly interpreted to include not only direct construction costs, but also loss of revenue from impacted operations. Analysis of costs may indicate a need to reevaluate allowable changes to operations. As aircraft operations and allowable changes will vary so widely among airports, this AC presents general guidance on those subjects.

e. Manage Safety Risk. Certain airport projects may require the airport operator to provide a Project Proposal Summary to help the FAA to determine the appropriate level of Safety Risk Management (SRM) documentation. The airport operator must coordinate with the appropriate FAA Airports Regional or District Office early in the development of the CSPP to determine the need for SRM documentation. See FAA Order 5200.11, FAA Airports (ARP) Safety Management System (SMS), for more information. If the FAA requires SRM documentation, the airport operator must at a minimum:

- (1) **Notify the appropriate FAA Airports Regional or District Office** during the project “scope development” phase of any project requiring a CSPP.
- (2) **Provide documents** identified by the FAA as necessary to conduct SRM.
- (3) **Participate in the SRM process** for airport projects.
- (4) **Provide a representative** to participate on the SRM panel.
- (5) **Ensure that all applicable SRM identified risks elements are recorded** and mitigated within the CSPP.

103. Develop a Construction Safety and Phasing Plan (CSPP). Development of an effective CSPP will require familiarity with many other documents referenced throughout this AC. See Appendix 1, Related Reading Material for a list of related reading material.

a. List Requirements. A CSPP must be developed for each on-airfield construction project funded by the Airport Improvement Program (AIP) or the Passenger Facility Charge (PFC) program or located on an airport certificated under Part 139. As per Order 5200.11, such projects do not include construction, rehabilitation, or change of any facility that is entirely outside the air operations area, does not involve any expansion of the facility envelope and does not involve construction equipment, haul routes or placement of material in locations that require access to the air operations area, increase the facility envelope, or impact line-of-sight. Such facilities may include passenger terminals and parking or other structures. However, extraordinary circumstances may trigger the need for a Safety Assessment and a CSPP. CSPP is subject to subsequent review and approval under the FAA’s Safety Risk Management procedures (see paragraph 102.e above). Additional information may be found in Order 5200.11.

b. Prepare a Safety Plan Compliance Document. The Safety Plan Compliance Document (SPCD) details how the contractor will comply with the CSPP. Also, it will not be possible to determine all safety plan details (for example specific hazard equipment and lighting, contractor’s points of contact, construction equipment heights) during the development of the CSPP. The successful contractor must define such details by preparing an SPCD that the airport operator reviews for approval prior to issuance of a notice-to-proceed. The SPCD is a subset of the CSPP, similar to how a shop drawing review is a subset to the technical specifications.

c. Assume Responsibility for the CSPP. The airport operator is responsible for establishing and enforcing the CSPP. The airport operator may use the services of an engineering consultant to help develop the CSPP. However, writing the CSPP cannot be delegated to the construction contractor. Only those details the airport operator determines cannot be addressed before contract award are developed by the contractor and submitted for approval as the SPCD. The SPCD does not restate nor propose differences to provisions already addressed in the CSPP.

104. Who Is Responsible for Safety During Construction?

a. Establish a Safety Culture. Everyone has a role in operational safety on airports during construction: the airport operator, the airport's consultants, the construction contractor and subcontractors, airport users, airport tenants, ARFF personnel, Air Traffic personnel, including Technical Operations personnel, FAA Airports Division personnel, and others. Close communication and coordination between all affected parties is the key to maintaining safe operations. Such communication and coordination should start at the project scoping meeting and continue through the completion of the project. The airport operator and contractor should conduct onsite safety inspections throughout the project and immediately remedy any deficiencies, whether caused by negligence, oversight, or project scope change.

b. Assess Airport Operator's Responsibilities. An airport operator has overall responsibility for all activities on an airport, including construction. This includes the predesign, design, preconstruction, construction, and inspection phases. Additional information on the responsibilities listed below can be found throughout this AC. The airport operator must:

(1) **Develop a CSPP** that complies with the safety guidelines of Chapter 2, Construction Safety and Phasing Plans, and Chapter 3, Guidelines for Writing a CSPP. The airport operator may develop the CSPP internally or have a consultant develop the CSPP for approval by the airport operator. For tenant sponsored projects, approve a CSPP developed by the tenant or its consultant.

(2) **Require, review and approve the SPCD** by the contractor that indicates how it will comply with the CSPP and provides details that cannot be determined before contract award.

(3) **Convene a preconstruction meeting** with the construction contractor, consultant, airport employees and, if appropriate, tenant sponsor and other tenants to review and discuss project safety before beginning construction activity. The appropriate FAA representatives should be invited to attend the meeting. See AC 150/5300-9, *Predesign, Prebid, and Preconstruction Conferences for Airport Grant Projects*. (Note "FAA" refers to the Airports Regional or District Office, the Air Traffic Organization, Flight Standards Service, and other offices that support airport operations, flight regulations, and construction/environmental policies.)

(4) **Ensure contact information** is accurate for each representative/point of contact identified in the CSPP and SPCD.

(5) **Hold weekly or, if necessary, daily safety meetings** with all affected parties to coordinate activities.

(6) **Notify users, ARFF personnel, and FAA ATO personnel of construction** and conditions that may adversely affect the operational safety of the airport via Notices to Airmen (NOTAM) and other methods, as appropriate. Convene a meeting for review and discussion if necessary.

(7) **Ensure construction personnel know of any applicable airport procedures** and of changes to those procedures that may affect their work.

(8) **Ensure construction contractors and subcontractors undergo training** required by the CSPP and SPCD.

(9) **Ensure vehicle and pedestrian operations** addressed in the CSPP and SPCD are coordinated with airport tenants, the airport traffic control tower (ATCT), and construction contractors.

(10) **At certificated airports**, ensure each CSPP and SPCD is consistent with Part 139.

(11) **Conduct inspections** sufficiently frequently to ensure construction contractors and tenants comply with the CSPP and SPCD and that there are no altered construction activities that could create potential safety hazards.

(12) **Resolve safety deficiencies immediately.** At airports subject to 49 CFR Part 1542, Airport Security, ensure construction access complies with the security requirements of that regulation.

(13) **Notify appropriate parties** when conditions exist that invoke provisions of the CSPP and SPCD (for example, implementation of low-visibility operations).

(14) **Ensure prompt submittal of a Notice of Proposed Construction or Alteration** (Form 7460-1) for conducting an aeronautical study of potential obstructions such as tall equipment (cranes, concrete pumps, other.), stock piles, and haul routes. A separate form may be filed for each potential obstruction, or one form may be filed describing the entire construction area and maximum equipment height. In the latter case, a separate form must be filed for any object beyond or higher than the originally evaluated area/height. The FAA encourages online submittal of forms for expediency. The appropriate FAA Airports Regional or District Office can provide assistance in determining which objects require an aeronautical study.

(15) **Promptly notify the FAA Airports Regional or District Office** of any proposed changes to the CSPP prior to implementation of the change. Changes to the CSPP require review and approval by the airport operator and the FAA. Coordinate with appropriate local and other federal government agencies, such as EPA, OSHA, TSA, and the state environmental agency.

c. Define Construction Contractor's Responsibilities. The contractor is responsible for complying with the CSPP and SPCD. The contractor must:

(1) **Submit a Safety Plan Compliance Document (SPCD)** to the airport operator describing how it will comply with the requirements of the CSPP and supplying any details that could not be determined before contract award. The SPCD must include a certification statement by the contractor that indicates it understands the operational safety requirements of the CSPP and it asserts it will not deviate from the approved CSPP and SPCD unless written approval is granted by the airport operator. Any construction practice proposed by the contractor that does not conform to the CSPP and SPCD may impact the airport's operational safety and will require a revision to the CSPP and SPCD and re-coordination with the airport operator and the FAA in advance.

(2) **Have available at all times copies** of the CSPP and SPCD for reference by the airport operator and its representatives, and by subcontractors and contractor employees.

(3) **Ensure that construction personnel** are familiar with safety procedures and regulations on the airport. Provide a point of contact who will coordinate an immediate response to correct any construction-related activity that may adversely affect the operational safety of the airport. Many projects will require 24-hour coverage.

(4) **Identify in the SPCD the contractor's on-site employees** responsible for monitoring compliance with the CSPP and SPCD during construction. At least one of these employees must be on-site whenever active construction is taking place.

(5) **Conduct inspections** sufficiently frequently to ensure construction personnel comply with the CSPP and SPCD and that there are no altered construction activities that could create potential safety hazards.

(6) Restrict movement of construction vehicles and personnel to permitted construction areas by flagging, barricading, erecting temporary fencing, or providing escorts, as appropriate and as specified in the CSPP and SPCD.

(7) Ensure that no contractor employees, employees of subcontractors or suppliers, or other persons enter any part of the air operations area (AOA) from the construction site unless authorized.

(8) Ensure prompt submittal through the airport operator of Form 7460-1 for the purpose of conducting an aeronautical study of contractor equipment such as tall equipment (cranes, concrete pumps, and other equipment), stock piles, and haul routes when different from cases previously filed by the airport operator. The FAA encourages online submittal of forms for expediency.

d. Define Tenant's Responsibilities if planning construction activities on leased property. Airport tenants, such as airline operators, fixed base operators, and FAA ATO/Technical Operations sponsoring construction must:

(1) Develop, or have a consultant develop, a project specific CSPP and submit it to the airport operator for certification and subsequent approval by the FAA. The approved CSPP must be made part of any contract awarded by the tenant for construction work.

(2) In coordination with its contractor, develop an SPCD and submit it to the airport operator for approval to be issued prior to issuance of a Notice to Proceed.

(3) Ensure that construction personnel are familiar with safety procedures and regulations on the airport.

(4) Provide a point of contact of who will coordinate an immediate response to correct any construction-related activity that may adversely affect the operational safety of the airport.

(5) Identify in the SPCD the contractor's on-site employees responsible for monitoring compliance with the CSPP and SPCD during construction. At least one of these employees must be on-site whenever active construction is taking place.

(6) Ensure that no tenant or contractor employees, employees of subcontractors or suppliers, or any other persons enter any part of the AOA from the construction site unless authorized.

(7) Restrict movement of construction vehicles to construction areas by flagging and barricading, erecting temporary fencing, or providing escorts, as appropriate, and as specified in the CSPP and SPCD.

(8) Ensure prompt submittal through the airport operator of Form 7460-1 for the purpose of conducting an aeronautical study of contractor equipment such as tall equipment (cranes, concrete pumps, other etc.), stock piles, and haul routes. The FAA encourages online submittal of forms for expediency.

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Chapter 2. Construction Safety and Phasing Plans

Section 1. Basic Considerations

201. Overview. Aviation safety is the primary consideration at airports, especially during construction. The airport operator's Construction Safety and Phasing Plan (CSPP) and the contractor's Safety Plan Compliance Document (SPCD) are the primary tools to ensure safety compliance when coordinating construction activities with airport operations. These documents identify all aspects of the construction project that pose a potential safety hazard to airport operations and outline respective mitigation procedures for each hazard. They must provide all information necessary for the Airport Operations department to conduct airfield inspections and expeditiously identify and correct unsafe conditions during construction. All aviation safety provisions included within the project drawings, contract specifications, and other related documents must also be reflected in the CSPP and SPCD.

202. Assume Responsibility. Operational safety on the airport remains the airport operator's responsibility at all times. The airport operator must develop, certify, and submit for FAA approval each CSPP. It is the airport operator's responsibility to apply the requirements of the FAA approved CSPP. The airport operator must revise the CSPP when conditions warrant changes and must submit the revised CSPP to the FAA for approval. The airport operator must also require and approve a SPCD from the project contractor.

203. Submit the CSPP. Construction Safety and Phasing Plans should be developed concurrently with the project design. Milestone versions of the CSPP should be submitted for review and approval as follows. While these milestones are not mandatory, early submission will help to avoid delays. Submittals are preferred in 8.5 x 11 in or 11 x 17 in format for compatibility with the FAA's Obstruction Evaluation / Airport Airspace Analysis (OE / AAA) process.

a. Submit an Outline/Draft. By the time approximately 25% to 30% of the project design is completed, the principal elements of the CSPP should be established. Airport operators are encouraged to submit an outline or draft, detailing all CSPP provisions developed to date, to the FAA for review at this stage of the project design.

b. Submit a Construction Safety and Phasing Plan (CSPP). The CSPP should be formally submitted for FAA approval when the project design is 80% to 90% complete. Since provisions in the CSPP will influence contract costs, it is important to obtain FAA approval in time to include all such provisions in the procurement contract.

c. Submit a Safety Plan Compliance Document (SPCD). The contractor should submit the SPCD to the airport operator for approval to be issued prior to the Notice to Proceed.

d. Submit CSPP Revisions. All revisions to the CSPP or SPCD should be submitted to the FAA for approval as soon as required changes are identified.

204. Meet CSPP Requirements.

a. To the extent possible, the CSPP should address the following as outlined in Section 2, Plan Requirements and Chapter 3, Guidelines for Writing a CSPP, as appropriate. Details that cannot be determined at this stage are to be included in the SPCD.

(1) Coordination.

- (a) Contractor progress meetings.
- (b) Scope or schedule changes.
- (c) FAA ATO coordination.
- (2) Phasing.**
 - (a) Phase elements.
 - (b) Construction safety drawings
- (3) Areas and operations affected by the construction activity.**
 - (a) Identification of affected areas.
 - (b) Mitigation of effects.
- (4) Protection of navigation aids (NAVAIDs).**
- (5) Contractor access.**
 - (a) Location of stockpiled construction materials.
 - (b) Vehicle and pedestrian operations.
- (6) Wildlife management.**
 - (a) Trash.
 - (b) Standing water.
 - (c) Tall grass and seeds.
 - (d) Poorly maintained fencing and gates.
 - (e) Disruption of existing wildlife habitat.
- (7) Foreign Object Debris (FOD) management.**
- (8) Hazardous materials (HAZMAT) management**
- (9) Notification of construction activities.**
 - (a) Maintenance of a list of responsible representatives/ points of contact.
 - (b) Notices to Airmen (NOTAM).
 - (c) Emergency notification procedures.
 - (d) Coordination with ARFF Personnel.
 - (e) Notification to the FAA.
- (10) Inspection requirements.**
 - (a) Daily (or more frequent) inspections.
 - (b) Final inspections.
- (11) Underground utilities.**
- (12) Penalties.**
- (13) Special conditions.**
- (14) Runway and taxiway visual aids.** Marking, lighting, signs, and visual NAVAIDs.

- (a) General.
- (b) Markings.
- (c) Lighting and visual NAVAIDs.
- (d) Signs.

(15) Marking and signs for access routes.

(16) Hazard marking and lighting.

- (a) Purpose.
- (b) Equipment.

(17) Protection. Of runway and taxiway safety areas, object free areas, obstacle free zones, and approach/departure surfaces

- (a) Runway Safety Area (RSA).
- (b) Runway Object Free Area (ROFA).
- (c) Taxiway Safety Area (TSA).
- (d) Taxiway Object Free Area (TOFA).
- (e) Obstacle Free Zone (OFZ).
- (f) Runway approach/departure surfaces.

(18) Other limitations on construction.

- (a) Prohibitions.
- (b) Restrictions.

b. The Safety Plan Compliance Document (SPCD) should include a general statement by the construction contractor that he/she has read and will abide by the CSPP. In addition, the SPCD must include all supplemental information that could not be included in the CSPP prior to the contract award. The contractor statement should include the name of the contractor, the title of the project CSPP, the approval date of the CSPP, and a reference to any supplemental information (that is, “I, Name of Contractor, have read the Title of Project CSPP, approved on Date, and will abide by it as written and with the following additions as noted:”). The supplemental information in the SPCD should be written to match the format of the CSPP indicating each subject by corresponding CSPP subject number and title. If no supplemental information is necessary for any specific subject, the statement, “No supplemental information,” should be written after the corresponding subject title. The SPCD should not duplicate information in the CSPP:

(1) Coordination. Discuss details of proposed safety meetings with the airport operator and with contractor employees and subcontractors.

(2) Phasing. Discuss proposed construction schedule elements, including:

- (a) Duration of each phase.
- (b) Daily start and finish of construction, including “night only” construction.
- (c) Duration of construction activities during:
 - (i) Normal runway operations.
 - (ii) Closed runway operations.
 - (iii) Modified runway “Aircraft Reference Code” usage.

(3) **Areas and operations affected by the construction activity.** These areas and operations should be identified in the CSPP and should not require an entry in the SPCD.

(4) **Protection of NAVAIDs.** Discuss specific methods proposed to protect operating NAVAIDs.

(5) **Contractor access.** Provide the following:

(a) Details on how the contractor will maintain the integrity of the airport security fence (gate guards, daily log of construction personnel, and other).

(b) Listing of individuals requiring driver training (for certificated airports and as requested).

(c) Radio communications.

(i) Types of radios and backup capabilities.

(ii) Who will be monitoring radios.

(iii) Whom to contact if ATCT cannot reach the contractor's designated person

(d) Details on how the contractor will escort material delivery vehicles.

(6) **Wildlife management.** Discuss the following:

(a) Methods and procedures to prevent wildlife attraction.

(b) Wildlife reporting procedures.

(7) **Foreign Object Debris (FOD) management.** Discuss equipment and methods for control of FOD, including construction debris and dust.

(8) **Hazardous material (HAZMAT) management.** Discuss equipment and methods for responding to hazardous spills.

(9) **Notification of construction activities.** Provide the following:

(a) Contractor points of contact.

(b) Contractor emergency contact.

(c) Listing of tall or other requested equipment proposed for use on the airport and the timeframe for submitting 7460-1 forms not previously submitted by the airport operator.

(d) Batch plant details, including 7460-1 submittal.

(10) **Inspection requirements.** Discuss daily (or more frequent) inspections and special inspection procedures.

(11) **Underground utilities.** Discuss proposed methods of identifying and protecting underground utilities.

(12) **Penalties.** Penalties should be identified in the CSPP and should not require an entry in the SPCD.

(13) **Special conditions.** Discuss proposed actions for each special condition identified in the CSPP.

(14) **Runway and taxiway visual aids.** Including marking, lighting, signs, and visual NAVAIDs. Discuss proposed visual aids including the following:

- (a) Equipment and methods for covering signage and airfield lights.
- (b) Equipment and methods for temporary closure markings (paint, fabric, other).
- (c) Types of temporary Visual Guidance Slope Indicators (VGSI).

(15) Marking and signs for access routes. Discuss proposed methods of demarcating access routes for vehicle drivers.

(16) Hazard marking and lighting. Discuss proposed equipment and methods for identifying excavation areas.

(17) Protection of runway and taxiway safety areas. including object free areas, obstacle free zones, and approach/departure surfaces. Discuss proposed methods of identifying, demarcating, and protecting airport surfaces including:

- (a) Equipment and methods for maintaining Taxiway Safety Area standards.
- (b) Equipment and methods for separation of construction operations from aircraft operations, including details of barricades.

(18) Other limitations on construction should be identified in the CSPP and should not require an entry in the SPCD.

Section 2. Plan Requirements

205. Coordination. Airport operators, or tenants conducting construction on their leased properties, should use predesign, prebid, and preconstruction conferences to introduce the subject of airport operational safety during construction (see AC 150/5300-9). In addition, the following should be coordinated as required:

a. Contractor Progress Meetings. Operational safety should be a standing agenda item for discussion during progress meetings throughout the project.

b. Scope or Schedule Changes. Changes in the scope or duration of the project may necessitate revisions to the CSPP and review and approval by the airport operator and the FAA.

c. FAA ATO Coordination. Early coordination with FAA ATO is required to schedule airway facility shutdowns and restarts. Relocation or adjustments to NAVAIDs, or changes to final grades in critical areas, may require an FAA flight inspection prior to restarting the facility. Flight inspections must be coordinated and scheduled well in advance of the intended facility restart. Flight inspections may require a reimbursable agreement between the airport operator and FAA ATO. Reimbursable agreements should be coordinated a minimum of 12 months prior to the start of construction. (See 213.e(3)(b) for required FAA notification regarding FAA owned NAVAIDs.)

206. Phasing. Once it has been determined what types and levels of airport operations will be maintained, the most efficient sequence of construction may not be feasible. In such a case, the sequence of construction may be phased to gain maximum efficiency while allowing for the required operations. The development of the resulting construction phases should be coordinated with local Air Traffic personnel and airport users. The sequenced construction phases established in the CSPP must be incorporated into the project design and must be reflected in the contract drawings and specifications.

a. Phase Elements. For each phase the CSPP should detail:

- Areas closed to aircraft operations

- Duration of closures
- Taxi routes
- ARFF access routes
- Construction staging areas
- Construction access and haul routes
- Impacts to NAVAIDs
- Lighting and marking changes
- Available runway length
- Declared distances (if applicable)
- Required hazard marking and lighting
- Lead times for required notifications

b. Construction Safety Drawings. Drawings specifically indicating operational safety procedures and methods in affected areas (that is, construction safety drawings) should be developed for each construction phase. Such drawings should be included in the CSPP as referenced attachments and should likewise be included in the contract drawing package.

207. Areas and Operations Affected by Construction Activity. Runways and taxiways should remain in use by aircraft to the maximum extent possible without compromising safety. Pre-meetings with the FAA Air Traffic Organization (ATO) will support operational simulations. See Chapter 3 for an example of a table showing temporary operations versus current operations.

a. Identification of Affected Areas. Identifying areas and operations affected by the construction will help to determine possible safety problems. The affected areas should be identified in the construction safety drawings for each construction phase. (See 206.b above.) Of particular concern are:

(1) Closing, or partial closing, of runways, taxiways and aprons. When a runway is partially closed, a portion of the pavement is unavailable for any aircraft operation, meaning taxiing, landing, or taking off in either direction on that pavement is prohibited. A displaced threshold, by contrast, is established to ensure obstacle clearance and adequate safety area for landing aircraft. The pavement prior to the displaced threshold is available for take-off in the direction of the displacement and for landing and taking off in the opposite direction. Misunderstanding this difference, and issuance of a subsequently inaccurate NOTAM, can lead to a hazardous condition.

(2) Closing of Aircraft Rescue and Fire Fighting access routes.

(3) Closing of access routes used by airport and airline support vehicles.

(4) Interruption of utilities, including water supplies for fire fighting.

(5) Approach/departure surfaces affected by heights of objects.

(6) Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads.

b. Mitigation of Effects. Establishment of specific procedures is necessary to maintain the safety and efficiency of airport operations. The CSPP must address:

(1) Temporary changes to runway and/or taxi operations.

(2) Detours for ARFF and other airport vehicles.

- (3) **Maintenance of essential utilities.**
- (4) **Temporary changes to air traffic control procedures. Such changes must be coordinated with the ATO.**

208. Navigation Aid (NAVAID) Protection. Before commencing construction activity, parking vehicles, or storing construction equipment and materials near a NAVAID, coordinate with the appropriate FAA ATO/Technical Operations office to evaluate the effect of construction activity and the required distance and direction from the NAVAID. (See paragraph 213.e(3) below.) Construction activities, materials/equipment storage, and vehicle parking near electronic NAVAIDs require special consideration since they may interfere with signals essential to air navigation. If any NAVAID may be affected, the CSPP and SPCD must show an understanding of the “critical area” associated with each NAVAID and describe how it will be protected. Where applicable, the operational critical areas of NAVAIDs should be graphically delineated on the project drawings. Pay particular attention to stockpiling material, as well as to movement and parking of equipment that may interfere with line of sight from the ATCT or with electronic emissions. Interference from construction equipment and activities may require NAVAID shutdown or adjustment of instrument approach minimums for low visibility operations. This condition requires that a NOTAM be filed (see paragraph 213.b below). Construction activities and materials/equipment storage near a NAVAID must not obstruct access to the equipment and instruments for maintenance. Submittal of a 7460-1 form is required for construction vehicles operating near FAA NAVAIDs. (See paragraph 213.e(1) below.)

209. Contractor Access. The CSPP must detail the areas to which the contractor must have access, and explain how contractor personnel will access those areas. Specifically address:

a. Location of Stockpiled Construction Materials. Stockpiled materials and equipment storage are not permitted within the RSA and OFZ, and if possible should not be permitted within the Object Free Area (OFA) of an operational runway. Stockpiling material in the OFA requires submittal of a 7460-1 form and justification provided to the appropriate FAA Airports Regional or District Office for approval. The airport operator must ensure that stockpiled materials and equipment adjacent to these areas are prominently marked and lighted during hours of restricted visibility or darkness. (See paragraph 218.b below.) This includes determining and verifying that materials are stabilized and stored at an approved location so as not to be a hazard to aircraft operations and to prevent attraction of wildlife and foreign object damage. See paragraphs 210 and 211 below.

b. Vehicle and Pedestrian Operations. The CSPP should include specific vehicle and pedestrian requirements. Vehicle and pedestrian access routes for airport construction projects must be controlled to prevent inadvertent or unauthorized entry of persons, vehicles, or animals onto the AOA. The airport operator should coordinate requirements for vehicle operations with airport tenants, contractors, and the FAA air traffic manager. In regard to vehicle and pedestrian operations, the CSPP should include the following, and detail associated training requirements:

(1) **Construction site parking.** Designate in advance vehicle parking areas for contractor employees to prevent any unauthorized entry of persons or vehicles onto the AOA. These areas should provide reasonable contractor employee access to the job site.

(2) **Construction equipment parking.** Contractor employees must park and service all construction vehicles in an area designated by the airport operator outside the OFZ and never in the safety area of an active runway or taxiway. Unless a complex setup procedure makes movement of specialized equipment infeasible, inactive equipment must not be parked on a closed taxiway or runway. If it is necessary to leave specialized equipment on a closed taxiway or runway at night, the equipment must be well lighted. Employees should also park construction vehicles outside the OFA when not in use by construction personnel (for example, overnight, on weekends, or during other periods when construction is not active). Parking areas must not obstruct the clear line of sight by the ATCT to any taxiways or runways under air traffic control nor obstruct any runway visual aids, signs, or navigation aids. The FAA

must also study those areas to determine effects on airport design criteria, surfaces established by 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace (Part 77), and on NAVAIDs and Instrument Approach Procedures (IAP). See paragraph 213.e(1) below for further information.

(3) Access and haul roads. Determine the construction contractor's access to the construction sites and haul roads. Do not permit the construction contractor to use any access or haul roads other than those approved. Access routes used by contractor vehicles must be clearly marked to prevent inadvertent entry to areas open to airport operations. Pay special attention to ensure that if construction traffic is to share or cross any ARFF routes that ARFF right of way is not impeded at any time, and that construction traffic on haul roads does not interfere with NAVAIDs or approach surfaces of operational runways.

(4) Marking and lighting of vehicles in accordance with AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport.

(5) Description of proper vehicle operations on various areas under normal, lost communications, and emergency conditions.

(6) Required escorts.

(7) Training requirements for vehicle drivers to ensure compliance with the airport operator's vehicle rules and regulations. Specific training should be provided to those vehicle operators providing escorts. See AC 150/5210-20, Ground Vehicle Operations on Airports, for information on training and records maintenance requirements.

(8) Situational awareness. Vehicle drivers must confirm by personal observation that no aircraft is approaching their position (either in the air or on the ground) when given clearance to cross a runway, taxiway, or any other area open to airport operations. In addition, it is the responsibility of the escort vehicle driver to verify the movement/position of all escorted vehicles at any given time.

(9) Two-way radio communication procedures.

(a) General. The airport operator must ensure that tenant and construction contractor personnel engaged in activities involving unescorted operation on aircraft movement areas observe the proper procedures for communications, including using appropriate radio frequencies at airports with and without ATCT. When operating vehicles on or near open runways or taxiways, construction personnel must understand the critical importance of maintaining radio contact, as directed by the airport operator, with: (i) Airport operations, (ii) ATCT, (iii) Common Traffic Advisory Frequency (CTAF), which may include UNICOM, (iv) Automatic Terminal Information Service (ATIS). This frequency is useful for monitoring conditions on the airport. Local air traffic will broadcast information regarding construction related runway closures and "shortened" runways on the ATIS frequency.

(b) Areas requiring two-way radio communication with the ATCT. Vehicular traffic crossing active movement areas must be controlled either by two-way radio with the ATCT, escort, flagman, signal light, or other means appropriate for the particular airport.

(c) Frequencies to be used. The airport operator will specify the frequencies to be used by the contractor, which may include the CTAF for monitoring of aircraft operations. Frequencies may also be assigned by the airport operator for other communications, including any radio frequency in compliance with Federal Communications Commission requirements. At airports with an ATCT, the airport operator will specify the frequency assigned by the ATCT to be used between contractor vehicles and the ATCT.

(d) Proper radio usage, including read back requirements.

(e) Proper phraseology, including the International Phonetic Alphabet.

(f) Light gun signals. Even though radio communication is maintained, escort vehicle drivers must also familiarize themselves with ATCT light gun signals in the event of radio failure. See the FAA safety placard “Ground Vehicle Guide to Airport Signs and Markings.” This safety placard may be downloaded through the Runway Safety Program Web site at:

http://www.faa.gov/airports/runway_safety/publications/ (See “Signs & Markings Vehicle Dashboard Sticker”.) or obtained from the FAA Airports Regional Office.

(10) Maintenance of the secured area of the airport, including:

(a) Fencing and gates. Airport operators and contractors must take care to maintain security during construction when access points are created in the security fencing to permit the passage of construction vehicles or personnel. Temporary gates should be equipped so they can be securely closed and locked to prevent access by animals and unauthorized people. Procedures should be in place to ensure that only authorized persons and vehicles have access to AOA and to prohibit “piggybacking” behind another person or vehicle. The Department of Transportation (DOT) document DOT/FAA/AR-00/52, Recommended Security Guidelines for Airport Planning and Construction, provides more specific information on fencing. A copy of this document can be obtained from the Airport Consultants Council, Airports Council International, or American Association of Airport Executives.

(b) Badging requirements.

(c) Airports subject to 49 CFR Part 1542, Airport Security, must meet standards for access control, movement of ground vehicles, and identification of construction contractor and tenant personnel.

210. Wildlife Management. The CSPP and SPCD must be in accordance with the airport operator’s wildlife hazard management plan, if applicable. See also AC 150/5200-33, Hazardous Wildlife Attractants On or Near Airports, and Certalert 98-05, Grasses Attractive to Hazardous Wildlife. Construction contractors must carefully control and continuously remove waste or loose materials that might attract wildlife. Contractor personnel must be aware of and avoid construction activities that can create wildlife hazards on airports, such as:

a. Trash. Food scraps must be collected from construction personnel activity.

b. Standing Water.

c. Tall Grass and Seeds. Requirements for turf establishment can be at odds with requirements for wildlife control. Grass seed is attractive to birds. Lower quality seed mixtures can contain seeds of plants (such as clover) that attract larger wildlife. Seeding should comply with the guidance in AC 150/5370-10, Standards for Specifying Construction of Airports, Item T-901, Seeding. Contact the local office of the United States Department of Agriculture Soil Conservation Service or the State University Agricultural Extension Service (County Agent or equivalent) for assistance and recommendations. These agencies can also provide liming and fertilizer recommendations.

d. Poorly Maintained Fencing and Gates. See 209.b(10)(a) above.

e. Disruption of Existing Wildlife Habitat. While this will frequently be unavoidable due to the nature of the project, the CSPP should specify under what circumstances (location, wildlife type) contractor personnel should immediately notify the airport operator of wildlife sightings.

211. Foreign Object Debris (FOD) Management. Waste and loose materials, commonly referred to as FOD, are capable of causing damage to aircraft landing gears, propellers, and jet engines. Construction contractors must not leave or place FOD on or near active aircraft movement areas. Materials capable of creating FOD must be continuously removed during the construction project. Fencing (other than security fencing) may be necessary to contain material that can be carried by wind into areas where aircraft operate. See AC 150/5210-24, Foreign Object Debris (FOD) Management.

212. Hazardous Materials (HAZMAT) Management. Contractors operating construction vehicles and equipment on the airport must be prepared to expeditiously contain and clean-up spills resulting from fuel or hydraulic fluid leaks. Transport and handling of other hazardous materials on an airport also requires special procedures. See AC 150/5320-15, Management of Airport Industrial Waste.

213. Notification of Construction Activities. The CSPP and SPCD must detail procedures for the immediate notification of airport users and the FAA of any conditions adversely affecting the operational safety of the airport. It must address the notification actions described below, as applicable.

a. List of Responsible Representatives/ points of contact for all involved parties, and procedures for contacting each of them, including after hours.

b. NOTAMs. Only the airport operator may initiate or cancel NOTAMs on airport conditions, and is the only entity that can close or open a runway. The airport operator must coordinate the issuance, maintenance, and cancellation of NOTAMs about airport conditions resulting from construction activities with tenants and the local air traffic facility (control tower, approach control, or air traffic control center), and must provide information on closed or hazardous conditions on airport movement areas to the FAA Flight Service Station (FSS) so it can issue a NOTAM. The airport operator must file and maintain a list of authorized representatives with the FSS. Refer to AC 150/5200-28, Notices to Airmen (NOTAMs) for Airport Operators, for a sample NOTAM form. Only the FAA may issue or cancel NOTAMs on shutdown or irregular operation of FAA owned facilities. Any person having reason to believe that a NOTAM is missing, incomplete, or inaccurate must notify the airport operator. See paragraph 207.a(1) above regarding issuing NOTAMs for partially closed runways versus runways with displaced thresholds.

c. Emergency notification procedures for medical, fire fighting, and police response.

d. Coordination with ARFF. The CSPP must detail procedures for coordinating through the airport sponsor with ARFF personnel, mutual aid providers, and other emergency services if construction requires:

- The deactivation and subsequent reactivation of water lines or fire hydrants, or
- The rerouting, blocking and restoration of emergency access routes, or
- The use of hazardous materials on the airfield.

e. Notification to the FAA.

(1) **Part 77.** Any person proposing construction or alteration of objects that affect navigable airspace, as defined in Part 77, must notify the FAA. This includes construction equipment and proposed parking areas for this equipment (i.e. cranes, graders, other equipment) on airports. FAA Form 7460-1, Notice of Proposed Construction or Alteration, can be used for this purpose and submitted to the appropriate FAA Airports Regional or District Office. See Appendix 1, Related Reading Material, to download the form. Further guidance is available on the FAA web site at oeaaa.faa.gov.

(2) **Part 157.** With some exceptions, Title 14 CFR Part 157, Notice of Construction, Alteration, Activation, and Deactivation of Airports, requires that the airport operator notify the FAA in writing whenever a non-Federally funded project involves the construction of a new airport; the construction, realigning, altering, activating, or abandoning of a runway, landing strip, or associated taxiway; or the deactivation or abandoning of an entire airport. Notification involves submitting FAA Form 7480-1, Notice of Landing Area Proposal, to the nearest FAA Airports Regional or District Office. See Appendix 1, Related Reading Material to download the form.

(3) **NAVAIDS.** For emergency (short-notice) notification about impacts to both airport owned and FAA owned NAVAIDS, contact: 866-432-2622.

(a) **Airport owned/FAA maintained.** If construction operations require a shutdown of more than 24 hours, or more than 4 hours daily on consecutive days, of a NAVAID owned by the airport but maintained by the FAA, provide a 45-day minimum notice to FAA ATO/Technical Operations prior to facility shutdown.

(b) **FAA owned.**

(i) **General.** The airport operator must notify the appropriate FAA ATO Service Area Planning and Requirements (P&R) Group a minimum of 45 days prior to implementing an event that causes impacts to NAVAIDS. (Impacts to FAA equipment covered by a Reimbursable Agreement (RA) do not have to be reported by the airport operator.)

(ii) **Coordinate work for an FAA owned NAVAID shutdown with the local FAA ATO/Technical Operations office, including any necessary reimbursable agreements and flight checks. Detail procedures that address unanticipated utility outages and cable cuts that could impact FAA NAVAIDS. In addition, provide seven days notice to schedule the actual shutdown.**

214. **Inspection Requirements.**

a. Daily Inspections. Inspections should be conducted at least daily, but more frequently if necessary to ensure conformance with the CSPP. A sample checklist is provided in Appendix 3, Safety and Phasing Plan Checklist. See also AC 150/5200-18, Airport Safety Self-Inspection.

b. Final Inspections. New runways and extended runway closures may require safety inspections at certificated airports prior to allowing air carrier service. Coordinate with the FAA Airport Certification Safety Inspector (ACSI) to determine if a final inspection will be necessary.

215. Underground Utilities. The CSPP and/or SPCD must include procedures for locating and protecting existing underground utilities, cables, wires, pipelines, and other underground facilities in excavation areas. This may involve coordinating with public utilities and FAA ATO/Technical Operations. Note that “One Call” or “Miss Utility” services do not include FAA ATO/Technical Operations

216. Penalties. The CSPP should detail penalty provisions for noncompliance with airport rules and regulations and the safety plans (for example, if a vehicle is involved in a runway incursion). Such penalties typically include rescission of driving privileges or access to the AOA.

217. Special Conditions. The CSPP must detail any special conditions that affect the operation of the airport and will require the activation of any special procedures (for example, low-visibility operations, snow removal, aircraft in distress, aircraft accident, security breach, Vehicle / Pedestrian Deviation (VPD) and other activities requiring construction suspension/resumption).

218. Runway and Taxiway Visual Aids. Includes marking, lighting, signs, and visual NAVAIDS. The CSPP must ensure that areas where aircraft will be operating are clearly and visibly separated from construction areas, including closed runways. Throughout the duration of the construction project, verify that these areas remain clearly marked and visible at all times and that marking, lighting, signs, and visual NAVAIDS remain in place and operational. The CSPP must address the following, as appropriate:

a. General. Airport markings, lighting, signs, and visual NAVAIDS must be clearly visible to pilots, not misleading, confusing, or deceptive. All must be secured in place to prevent movement by prop wash, jet blast, wing vortices, or other wind currents and constructed of materials that would minimize damage to an aircraft in the event of inadvertent contact.

b. Markings. Markings must be in compliance with the standards of AC 150/5340-1, Standards for Airport Markings. Runways and runway exit taxiways closed to aircraft operations are marked with a yellow X. The preferred visual aid to depict temporary runway closure is the lighted X signal placed on or near the runway designation numbers. (See paragraph 218.b(1)(b) below.)

(1) Closed Runways and Taxiways.

(a) Permanently Closed Runways. For runways, obliterate the threshold marking, runway designation marking, and touchdown zone markings, and place Xs at each end and at 1,000-foot (300 m) intervals.



Figure 2-1 Markings for a Temporarily Closed Runway

(b) **Temporarily Closed Runways.** For runways that have been temporarily closed, place an X at the each end of the runway directly on or as near as practicable to the runway designation numbers. Figure 2-1 illustrates.

(c) **Partially Closed Runways and Displaced Thresholds.** When threshold markings are needed to identify the temporary beginning of the runway that is available for landing, the markings must comply with AC 150/5340-1. An X is not used on a partially closed runway or a runway with a displaced threshold. See paragraph 207.a(1) above for the difference between partially closed runways and runways with displaced thresholds.

(i) **Partially Closed Runways.** Pavement markings for temporarily closed portions of the runway consist of a runway threshold bar and yellow chevrons to identify pavement areas that are unsuitable for takeoff or landing (see AC 150/5340-1).

(ii) **Displaced Thresholds.** Pavement markings for a displaced threshold consist of a runway threshold bar and white arrowheads with and without arrow shafts. These markings are required to identify the portion of the runway before the displaced threshold to provide centerline guidance for pilots during approaches, takeoffs, and landing rollouts from the opposite direction. See AC 150/5340-1.

(d) **Taxiways.**

(i) **Permanently Closed Taxiways.** AC 150/5300-13 notes that it is preferable to remove the pavement, but for pavement that is to remain, place an X at the entrance to both ends of the closed section. Obliterate taxiway centerline markings, including runway leadoff lines, leading to the closed taxiway. Figure 2-2 illustrates.

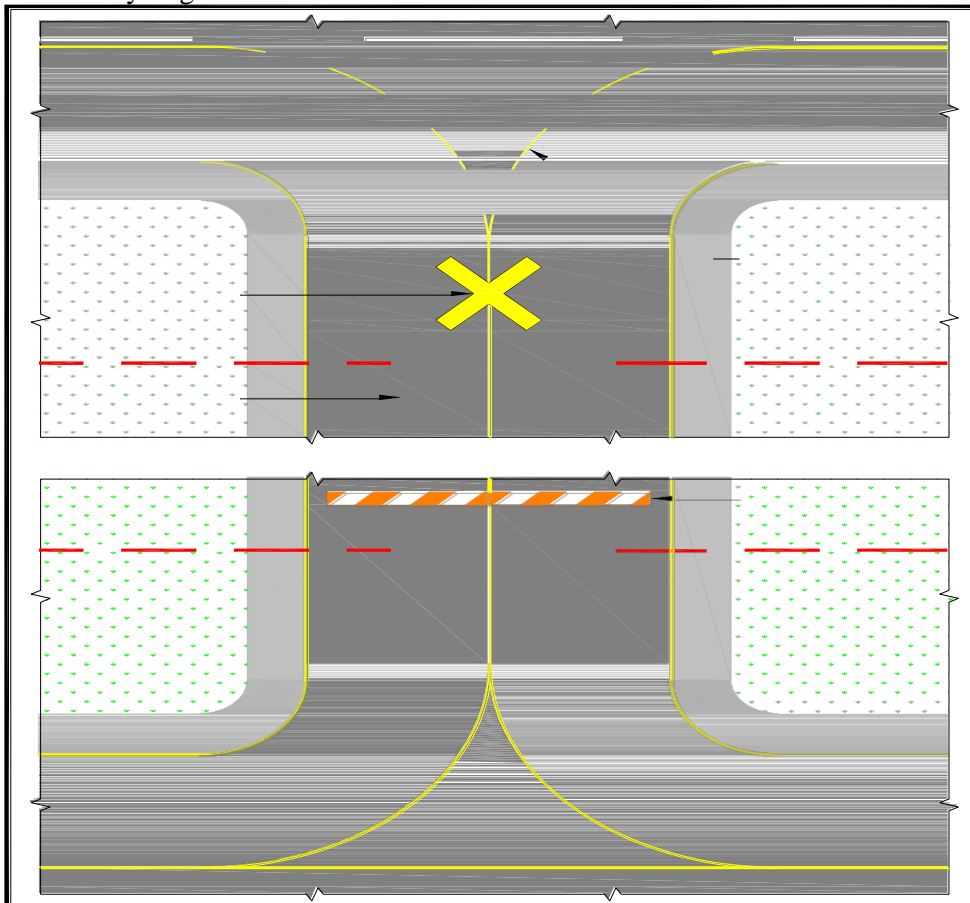


Figure 2-2 Taxiway Closure

(ii) **Temporarily Closed Taxiways.** Place barricades outside the safety area of intersecting taxiways. For runway/taxiway intersections, place an X at the entrance to the closed taxiway from the runway. If the taxiway will be closed for an extended period, obliterate taxiway centerline markings, including runway leadoff lines, leading to the closed section. If the centerline markings will be reused upon reopening the taxiway, it is preferable to paint over the marking. This will result in less damage to the pavement when the upper layer of paint is ultimately removed.

(e) **Temporarily Closed Airport.** When the airport is closed temporarily, mark all the runways as closed.

(2) If unable to paint temporary markings on the pavement, construct them from any of the following materials: fabric, colored plastic, painted sheets of plywood, or similar materials. They must be properly configured and appropriately secured to prevent movement by prop wash, jet blast, or other wind currents.

(3) It may be necessary to remove or cover runway markings, including but not limited to, runway designation markings, threshold markings, centerline markings, edge stripes, touchdown zone markings and aiming point markings, depending on the length of construction and type of activity at the airport. When removing runway markings, apply the same treatment to areas between stripes or numbers, as the cleaned area will appear to pilots as a marking in the shape of the treated area.

(4) If it is not possible to install threshold bars, chevrons, and arrows on the pavement, temporary outboard markings may be used. Locate them outside of the runway pavement surface on both sides of the runway. The dimension along the runway direction must be the same as if installed on the pavement. The lateral dimension must be at least one-half that of on-pavement markings. If the markings are not discernible on grass or snow, apply a black background with appropriate material over the ground to ensure they are clearly visible.

(5) The application rate of paint to mark a short-term temporary runway and taxiway markings may deviate from the standard (see Item P-620, "Runway and Taxiway Painting," in AC 150/5370-10), but the dimensions must meet the existing standards.

c. Lighting and Visual NAVAIDs. This paragraph refers to standard runway and taxiway lighting systems. See below for hazard lighting. Lighting must be in conformance with AC 150/5340-30, Design and Installation Details for Airport Visual Aids, and AC 150/5345-50, Specification for Portable Runway and Taxiway Lights. When disconnecting runway and taxiway lighting fixtures, disconnect the associated isolation transformers. Alternately, cover the light fixture in such a way as to prevent light leakage. Avoid removing the lamp from energized fixtures because an excessive number of isolation transformers with open secondaries may damage the regulators and/or increase the current above its normal value. Secure, identify, and place any above ground temporary wiring in conduit to prevent electrocution and fire ignition sources.

(1) **Permanently Closed Runways and Taxiways.** For runways and taxiways that have been permanently closed, disconnect the lighting circuits.

(2) **Temporarily Closed Runways.** If available, use a lighted X, both at night and during the day, placed at each end of the runway facing the approach. The use of a lighted X is required if night work requires runway lighting to be on. See AC 150/5345-55, Specification for L-893, Lighted Visual Aid to Indicate Temporary Runway Closure. For runways that have been temporarily closed, but for an extended period, and for those with pilot controlled lighting, disconnect the lighting circuits or secure switches to prevent inadvertent activation. For runways that will be opened periodically, coordinate procedures with the FAA air traffic manager or, at airports without an ATCT, the airport operator. Activate stop bars if available. Figure 2-3 shows a lighted X by day. Figure 2-4 shows a lighted X at night.



Figure 2-3 Lighted X in Daytime



Figure 2-4 Lighted X at Night

(3) Partially Closed Runways and Displaced Thresholds. When a runway is partially closed, a portion of the pavement is unavailable for any aircraft operation, meaning taxiing and landing or taking off in either direction. A displaced threshold, by contrast, is put in place to ensure obstacle clearance by landing aircraft. The pavement prior to the displaced threshold is available for takeoff in the direction of the displacement, and for landing and takeoff in the opposite direction. Misunderstanding this difference and issuance of a subsequently inaccurate NOTAM can result in a hazardous situation. For both partially closed runways and displaced thresholds, approach lighting systems at the affected end must be placed out of service

(a) Partially Closed Runways. Disconnect edge and threshold lights on that part of the runway at and behind the threshold (that is, the portion of the runway that is closed). Alternately, cover the light fixture in such a way as to prevent light leakage.

(b) Displaced Thresholds. Edge lighting in the area of the displacement emits red light in the direction of approach and yellow light in the opposite direction. Centerline lights are blanked out in the direction of approach if the displacement is 700 ft or less. If the displacement is over 700 feet, place the centerline lights out of service. See AC 150/5340-30 for details on lighting displaced thresholds.

(c) Temporary runway thresholds and runway ends must be lighted if the runway is lighted and it is the intended threshold for night landings or instrument meteorological conditions.

(d) A temporary threshold on an unlighted runway may be marked by retroreflective, elevated markers in addition to markings noted in paragraph 218.b(1)(c) above. Markers seen by aircraft on approach are green. Markers at the rollout end of the runway are red. At certificated airports, temporary elevated threshold markers must be mounted with a frangible fitting (see 14 CFR Part 139.309). At non-certificated airports, the temporary elevated threshold markings may either be mounted with a frangible fitting or be flexible. See AC 150/5345-39, Specification for L-853, Runway and Taxiway Retroreflective Markers.

(e) Temporary threshold lights and end lights and related visual NAVAIDs are installed outboard of the edges of the full-strength pavement only when they cannot be installed on the pavement. They are installed with bases at grade level or as low as possible, but not more than 3 in (7.6 cm) above ground. When any portion of a base is above grade, place properly compacted fill around the base to minimize the rate of gradient change so aircraft can, in an emergency, cross at normal landing or takeoff speeds without incurring significant damage. See AC 150/5370-10.

(f) Maintain threshold and edge lighting color and spacing standards as described in AC 150/5340-30. Battery powered, solar, or portable lights that meet the criteria in AC 150/5345-50 may be used. These systems are intended primarily for visual flight rules (VFR) aircraft operations but may be used for instrument flight rules (IFR) aircraft operations, upon individual approval from the Flight Standards Division of the applicable FAA Regional Office.

(g) Reconfigure yellow lenses (caution zone), as necessary. If the runway has centerline lights, reconfigure the red lenses, as necessary, or place the centerline lights out of service.

(h) Relocate the visual glide slope indicator (VGSI), such as VASI and PAPI; other airport lights, such as Runway End Identifier Lights (REIL); and approach lights to identify the temporary threshold. Another option is to disable the VGSI or any equipment that would give misleading indications to pilots as to the new threshold location. Installation of temporary visual aids may be necessary to provide adequate guidance to pilots on approach to the affected runway. If the FAA owns and operates the VGSI, coordinate its installation or disabling with the local ATO/Technical Operations Office. Relocation of such visual aids will depend on the duration of the project and the benefits gained from the relocation, as this can result in great expense.

(i) Issue a NOTAM to inform pilots of temporary lighting conditions.

(4) Temporarily Closed Taxiways. If possible, deactivate the taxiway lighting circuits. When deactivation is not possible (for example other taxiways on the same circuit are to remain open), cover the light fixture in such a way as to prevent light leakage.

d. Signs. To the extent possible, signs must be in conformance with AC 150/5345-44, Specification for Runway and Taxiway Signs and AC 150/5340-18, Standard for Airport Sign Systems. Any time a sign does not serve its normal function; it must be covered or removed to prevent misdirecting pilots. Note that information signs identifying a crossing taxiway continue to perform their normal function even if the crossing taxiway is closed. For long term construction projects, consider relocating signs, especially runway distance remaining signs.

219. Marking and Signs for Access Routes. The CSPP should indicate that pavement markings and signs for construction personnel will conform to AC 150/5340-18 and, to the extent practicable, with the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and/or State highway specifications. Signs adjacent to areas used by aircraft must comply with the frangibility requirements of AC 150/5220-23, Frangible Connections, which may require modification to size and height guidance in the MUTCD.

220. Hazard Marking, Lighting and Signing.

a. Hazard Marking and Lighting Prevents Pilots from entering areas closed to aircraft, and prevents construction personnel from entering areas open to aircraft. The CSPP must specify prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles. Hazard marking and lighting must also be specified to identify open manholes, small areas under repair, stockpiled material, waste areas, and areas subject to jet blast. Also consider less obvious construction-related hazards and include markings to identify FAA, airport, and National Weather Service facilities cables and power lines; instrument landing system (ILS) critical areas; airport surfaces, such as RSA, OFA, and OFZ; and other sensitive areas to make it easier for contractor personnel to avoid these areas.

b. Equipment.

(1) Barricades, including traffic cones, (weighted or sturdily attached to the surface) are acceptable methods used to identify and define the limits of construction and hazardous areas on airports. Careful consideration must be given to selecting equipment that poses the least danger to aircraft but is sturdy enough to remain in place when subjected to typical winds, prop wash and jet blast. The spacing of barricades must be such that a breach is physically prevented barring a deliberate act. For example, if barricades are intended to exclude vehicles, gaps between barricades must be smaller than the width of the excluded vehicles, generally 4 ft. Provision must be made for ARFF access if necessary. If barricades are intended to exclude pedestrians, they must be continuously linked. Continuous linking may be accomplished through the use of ropes, securely attached to prevent FOD.

(2) Lights must be red, either steady burning or flashing, and must meet the luminance requirements of the State Highway Department. Batteries powering lights will last longer if lights flash. Lights must be mounted on barricades and spaced at no more than 10 ft. Lights must be operated between sunset and sunrise and during periods of low visibility whenever the airport is open for operations. They may be operated by photocell, but this may require that the contractor turn them on manually during periods of low visibility during daytime hours.

(3) Supplement barricades with signs (for example “No Entry,” “No Vehicles”) as necessary.

(4) Air Operations Area – General. Barricades are not permitted in any active safety area. Within a runway or taxiway object free area, and on aprons, use orange traffic cones, flashing or steady burning red lights as noted above, collapsible barricades marked with diagonal, alternating orange and white stripes; and/or signs to separate all construction/maintenance areas from the movement area. Barricades may be supplemented with alternating orange and white flags at least 20 by 20 in (50 by 50 cm) square and securely fastened to eliminate FOD. All barricades adjacent to any open runway or taxiway/taxilane safety area, or apron must be as low as possible to the ground, and no more than 18 in high, exclusive of supplementary lights and flags. Barricades must be of low mass; easily collapsible upon contact with an aircraft or any of its components; and weighted or sturdily attached to the surface to prevent displacement from prop wash, jet blast, wing vortex, or other surface wind currents. If affixed to the surface, they must be frangible at grade level or as low as possible, but not to exceed 3 in (7.6 cm) above the ground. Figure 2-5 and Figure 2-6 show sample barricades with proper coloring and flags.



Figure 2-5 Interlocking Barricades



Figure 2-6 Low Profile Barricades

(5) **Air Operations Area – Runway/Taxiway Intersections.** Use highly reflective barricades with lights to close taxiways leading to closed runways. Evaluate all operating factors when determining how to mark temporary closures that can last from 10 to 15 minutes to a much longer period of time. However, even for closures of relatively short duration, close all taxiway/runway intersections with barricades. The use of traffic cones is appropriate for short duration closures.

(6) **Air Operations Area – Other.** Beyond runway and taxiway object free areas and aprons, barricades intended for construction vehicles and personnel may be many different shapes and made from various materials, including railroad ties, sawhorses, jersey barriers, or barrels.

(7) **Maintenance.** The construction specifications must include a provision requiring the contractor to have a person on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades. The contractor must file the contact person's information with the airport operator. Lighting should be checked for proper operation at least once per day, preferably at dusk.

221. Protection of Runway and Taxiway Safety Areas. Runway and taxiway safety areas, Obstacle Free zones (OFZ), object free areas (OFA), and approach surfaces are described in AC 150/5300-13. Protection of these areas includes limitations on the location and height of equipment and stockpiled material. An FAA airspace study may be required. Coordinate with the appropriate FAA Airports Regional or District Office if there is any doubt as to requirements or dimensions (See paragraph 213.e above.) as soon as the location and height of materials or equipment are known. The CSPP should include drawings showing all safety areas, object free areas, obstacle free zones and approach departure surfaces affected by construction.

a. Runway Safety Area (RSA). A runway safety area is the defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway (see AC 150/5300-13). Construction activities within the existing RSA are subject to the following conditions:

(1) **No construction may occur within the existing RSA** while the runway is open for aircraft operations. The RSA dimensions may be temporarily adjusted if the runway is restricted to aircraft operations requiring an RSA that is equal to the RSA width and length beyond the runway ends available during construction. (see AC 150/5300-13). The temporary use of declared distances and/or partial runway closures may provide the necessary RSA under certain circumstances. Coordinate with the appropriate FAA Airports Regional or District Office to have declared distances information published. See AC 150/5300-13 for guidance on the use of declared distances.

(2) **The airport operator must coordinate** the adjustment of RSA dimensions as permitted above with the appropriate FAA Airports Regional or District Office and the local FAA air traffic manager and issue a NOTAM.

(3) **The CSPP and SPCD must provide procedures** for ensuring adequate distance for protection from blasting operations, if required by operational considerations.

(4) **Excavations.**

(a) Open trenches or excavations are not permitted within the RSA while the runway is open. If possible, backfill trenches before the runway is opened. If the runway must be opened before excavations are backfilled, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft operating on the runway across the trench without damage to the aircraft.

(b) Construction contractors must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport operator, and light them with red lights during hours of restricted visibility or darkness.

(5) **Erosion Control.** Soil erosion must be controlled to maintain RSA standards, that is, the RSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and fire fighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

b. Runway Object Free Area (ROFA). Construction, including excavations, may be permitted in the ROFA. However, equipment must be removed from ROFA when not in use, and material should not be stockpiled in ROFA if not necessary. Stockpiling material in the OFA requires submittal of a 7460-1 form and justification provided to the appropriate FAA Airports Regional or District Office for approval.

c. Taxiway Safety Area (TSA). A taxiway safety area is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway. (See AC 150/5300-13.) Construction activities within the TSA are subject to the following conditions:

(1) **No construction may occur** within the TSA while the taxiway is open for aircraft operations. The TSA dimensions may be temporarily adjusted if the taxiway is restricted to aircraft operations requiring a TSA that is equal to the TSA width available during construction (see AC 150/5300-13, Table 4-1).

(2) **The airport operator must coordinate** the adjustment of the TSA width as permitted above with the appropriate FAA Airports Regional or District Office and the FAA air traffic manager and issue a NOTAM.

(3) **The CSPP and SPCD must provide procedures** for ensuring adequate distance for protection from blasting operations.

(4) **Excavations.**

(a) Open trenches or excavations are not permitted within the TSA while the taxiway is open. If possible, backfill trenches before the taxiway is opened. If the taxiway must be opened before excavations are backfilled, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft operating on the taxiway across the trench without damage to the aircraft.

(b) Construction contractors must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport operator, and light them with red lights during hours of restricted visibility or darkness.

(5) **Erosion Control.** Soil erosion must be controlled to maintain TSA standards, that is, the TSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and fire fighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

d. Taxiway Object Free Area (TOFA). Unlike the Runway Object Free Area, aircraft wings regularly penetrate the taxiway object free area during normal operations. Thus the restrictions are more stringent. Except as provided below, no construction may occur within the taxiway object free area while the taxiway is open for aircraft operations.

(1) **The taxiway object free area dimensions** may be temporarily adjusted if the taxiway is restricted to aircraft operations requiring a taxiway object free area that is equal to the taxiway object free area width available.

(2) **Offset taxiway pavement markings** may be used as a temporary measure to provide the required taxiway object free area. Where offset taxiway pavement markings are provided, centerline lighting or reflectors are required.

(3) **Construction activity may be accomplished** without adjusting the width of the taxiway object free area, subject to the following restrictions:

(a) Appropriate NOTAMs are issued.

(b) Marking & lighting meeting provisions of paragraphs 218 & 220 above are implemented.

(c) Five-foot clearance is maintained between equipment and materials and any part of an aircraft (includes wingtip overhang). In these situations, flaggers must be used to direct construction equipment, and wing walkers will be necessary to guide aircraft. Wing walkers should be airline/aviation personnel rather than construction workers. If such clearance can only be maintained if an aircraft does not have full use of the entire taxiway width (with its main landing gear at the edge of the pavement), then it will be necessary to move personnel and equipment for the passage of that aircraft.

e. Obstacle Free Zone (OFZ). In general, personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations. If a penetration to the OFZ is necessary, it may be possible to continue aircraft operations through operational restrictions. Coordinate with the FAA through the appropriate FAA Airports Regional or District Office.

f. Runway Approach/Departure Areas and Clearways. All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces, as defined in Appendix 2, "Threshold Siting Requirements," of AC 150/5300-13. Objects that do not penetrate these surfaces may still be obstructions to air navigation and may affect standard instrument approach procedures. Coordinate with the FAA through the appropriate FAA Airports Regional or District Office.

(1) Construction activity in a runway approach/departure area may result in the need to partially close a runway or displace the existing runway threshold. Partial runway closure, displacement of the runway threshold, as well as closure of the complete runway and other portions of the movement area also require coordination through the airport operator with the appropriate FAA air traffic manager (FSS if non-towered) and ATO/Technical Operations (for affected NAVAIDS) and airport users.

(2) Caution regarding partial runway closures. When filing a NOTAM for a partial runway closure, clearly state to OCC personnel that the portion of pavement located prior to the threshold is not available for landing and departing traffic. In this case, the threshold has been moved for both landing and takeoff purposes (this is different than a displaced threshold). There may be situations where the portion of closed runway is available for taxiing only. If so, the NOTAM must reflect this condition).

(3) Caution regarding displaced thresholds. Implementation of a displaced threshold affects runway length available for aircraft landing over the displacement. Depending on the reason for the displacement (to provide obstruction clearance or RSA), such a displacement may also require an adjustment in the landing distance available and accelerate-stop distance available in the opposite direction. If project scope includes personnel, equipment, excavation, other work within the existing RSA of any usable runway end, do not implement a displaced threshold unless arrivals and departures toward the construction activity are prohibited. Instead, implement a partial closure.

222. Other Limitations on Construction. The CSPP must specify any other limitations on construction, including but not limited to:

a. Prohibitions.

(1) No use of tall equipment (cranes, concrete pumps, and so on) unless a 7460-1 determination letter is issued for such equipment.

(2) No use of open flame welding or torches unless fire safety precautions are provided and the airport operator has approved their use.

(3) No use of electrical blasting caps on or within 1,000 ft (300 m) of the airport property.
See AC 150/5370-10.

(4) No use of flare pots within the AOA.

b. Restrictions.

(1) Construction suspension required during specific airport operations.

(2) Areas that cannot be worked on simultaneously.

(3) Day or night construction restrictions.

(4) Seasonal construction restrictions.

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Chapter 3. Guidelines for Writing a CSPP

301. General Requirements. The CSPP is a standalone document written to correspond with the subjects outlined in Chapter 2, Section 1, paragraph 204. The CSPP is organized by numbered sections corresponding to each subject listed in Chapter 2, Section 1, paragraph 204, and described in detail in Chapter 2, Section 2. Each section number and title in CSPP matches the corresponding subject outlined in Chapter 2, paragraph 204 (for example, 1. Coordination, 2. Phasing, 3. Areas and Operations Affected by the Construction Activity, and so on.). With the exception of the project scope of work outlined in Section 2. Phasing, only subjects specific to operational safety during construction should be addressed.

302. Applicability of Subjects. Each section should, to the extent practical, focus on the specific subject. Where an overlapping requirement spans several sections, the requirement should be explained in detail in the most applicable section. A reference to that section should be included in all other sections where the requirement may apply. For example, the requirement to protect existing underground FAA Instrument Landing System (ILS) cables during trenching operations could be considered FAA ATO coordination (Section 1. Coordination, paragraph 205.c), an area and operation affected by the construction activity (Section 3. Areas and Operations Affected by the Construction Activity, paragraph 207.a(4)), a protection of a NAVAID (Section 4. Protection of Navigational Aids (NAVAIDs), paragraph 208), or a notification to the FAA of construction activities (Section 9. Notification of Construction Activities, paragraph 210.e(3)(b)). However, it is more specifically an underground utility requirement (Section 11. Underground Utilities, paragraph 215). The procedure for protecting underground ILS cables during trenching operations should therefore be described in Section 11: “*The contractor must coordinate with the local FAA System Support Center (SSC) to mark existing ILS cable routes along Runway 17-35. The ILS cables will be located by hand digging whenever the trenching operation moves within 10 feet of the cable markings.*” All other applicable sections should include a reference to Section 11: “*ILS cables shall be identified and protected as described in Section 11*” or “*See Section 11 for ILS cable identification and protection requirements.*” Thus, the CSPP should be considered as a whole, with no need to duplicate responses to related issues.

303. Graphical Representations. Construction safety drawings should be included in the CSPP as attachments. When other graphical representations will aid in supporting written statements, the drawings, diagrams, and/or photographs should also be attached to the CSPP. References should be made in the CSPP to each graphical attachment and may be made in multiple sections.

304. Reference Documents. The CSPP must not incorporate a document by reference unless reproduction of the material in that document is prohibited. In that case, either copies of or a source for the referenced document must be provided to the contractor.

305. Restrictions. CSPP should not be considered as a project design review document. CSPP must also avoid mention of permanent (“as-built”) features such as pavements, markings, signs, and lighting, except when such features are intended to aid in maintaining operational safety during the construction.

306. Coordination. Include in this section a detailed description of conferences and meetings both before and during the project. Include appropriate information from AC 150/5300-9. Discuss coordination procedures and schedules for each required FAA ATO airway facility shutdown and restart and all required flight inspections.

307. Phasing. Include in this section a detailed scope of work description for the project as a whole and each phase of work covered by the CSPP. This includes all locations and durations of the work proposed. Attach drawings to graphically support the written scope of work. Detail in this section the sequenced phases of proposed construction. Include a reference to paragraph 308 below, as appropriate.

308. Areas and Operations Affected By Construction. Focus in this section on identifying the areas and operations affected by the construction. Describe corresponding mitigation that is not covered in detail elsewhere in the CSPP. Include references to paragraphs below as appropriate. Attach drawings as necessary to graphically describe affected areas and mechanisms proposed. Tables and charts such as the following may be helpful in highlighting issues to be addressed.

Table 3-1 Sample Operations Effects

Pro	Runway 15-33 Reconstruction	
P	Phase II: Reconstruct Runway 15 End	
Scope of Work	Reconstruct 1,000 ft of north end of Runway 15-33 with Portland Cement Concrete (PCC).	
Operational Requirements	Normal (Existing)	Phase II (Anticipated)
Runway 15 Average Aircraft Operations	Carrier: 52 /day GA: 26 /day Military: 11 /day	Carrier: 52 / day GA: 20 / day Military: 0 /day
Runway 33 Average Aircraft Operations	Carrier: 40 /day GA: 18 /day Military: 10 /day	Carrier: 20 /day GA: 5 /day Military: 0 /day
Runway 15-33 ARC	C-IV	C-IV
Runway 15 Approach Visibility Min.	¾ mile	1 mile
Runway 33 Approach Visibility Min.	¾ mile	1 mile
Runway 15 Declared Distances	TORA: 7,820	TORA: 6,420
	TODA: 7,820	TODA: 6,420
	ASDA: 7,820	ASDA: 6,420
	LDA: 7,820	LDA: 6,420
Runway 33 Declared Distances	TORA: 8,320	TORA: 6,920
	TODA: 8,320	TODA: 6,920
	ASDA: 8,320	ASDA: 6,920
	LDA: 7,820	LDA: 6,420
Runway 15 Approach Procedures	ILS	LOC only
	RNAV	N/A
	VOR	N/A
Runway 33 Approach Procedures	ILS	Visual only
	RNAV	N/A
	VOR	N/A
Runway 15 NAVAIDs	ILS/DME, MALSR, RVR	LOC/DME, PAPI (temp), RVR
Runway 33 NAVAIDs	ILS/DME, MALSF, PAPI, RVR	MALSF, PAPI, RVR
Taxiway G ADG	IV	N/A between T/W H & R/W 15 end
Taxiway E ADG	IV	IV
ATCT (hours open)	06:00 – 24:00 local	06:00 – 24:00 local
ARFF	D	D
Special Conditions	Air National Guard (ANG) military operations	Military operations relocated to alternate ANG Base
	Airline XYZ requires VGSI	Airline XYZ requires VGSI

Complete the following chart for each phase to determine the area that must be protected along the runway edges:

Runway	Aircraft Approach Category* A, B, C, or D	Airplane Design Group* I, II, III, or IV	RSA Width in Feet Divided by 2*
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

*See AC 150/5300-13 to complete the chart for a specific runway.

Complete the following chart for each phase to determine the area that must be protected before the runway threshold:

Runway End Number	Airplane Design Group* I, II, III, or IV	Aircraft Approach Category* A, B, C, or D	Minimum Safety Area Prior to the Threshold*	Minimum Distance to Threshold Based on Required Approach Slope*	
_____	_____	_____	_____ ft	_____ ft	_____: 1
_____	_____	_____	_____ ft	_____ ft	_____: 1
_____	_____	_____	_____ ft	_____ ft	_____: 1
_____	_____	_____	_____ ft	_____ ft	_____: 1

*See AC 150/5300-13 to complete the chart for a specific runway.

309. Navigation Aid (NAVAID) Protection. List in this section all NAVAID facilities that will be affected by the construction. Identify NAVAID facilities that will be placed out of service at any time prior to or during construction activities. Identify individuals responsible for coordinating each shutdown and when each facility will be out of service. Include a reference to paragraph 306 above for FAA ATO NAVAID shutdown, restart, and flight inspection coordination. Outline in detail procedures to protect each NAVAID facility remaining in service from interference by construction activities. Include a reference to paragraph 314 for the issuance of NOTAMs as required. Include a reference to paragraph 316 for the protection of underground cables and piping serving NAVAIDS. If temporary visual aids are proposed to replace or supplement existing facilities, include a reference to paragraph 319. Attach drawings to graphically indicate the affected NAVAIDS and the corresponding critical areas.

310. Contractor Access. This will necessarily be the most extensive section of the CSPP. Provide sufficient detail so that a contractor not experienced in working on airports will understand the unique restrictions such work will require. Due to this extent, it should be broken down into subsections as described below:

a. Location of Stockpiled Construction Materials. Describe in this section specific locations for stockpiling material. Note any height restrictions on stockpiles. Include a reference to paragraph 321 for hazard marking and lighting devices used to identify stockpiles. Include a reference to paragraph 311 for provisions to prevent stockpile material from becoming wildlife attractants. Include a reference to paragraph 312 for provisions to prevent stockpile material from becoming FOD. Attach drawings to graphically indicate the stockpile locations.

b. Vehicle and Pedestrian Operations. While there are many items to be addressed in this major subsection of the CSPP, all are concerned with one main issue: keeping people and vehicles from areas of the airport where they don't belong. This includes preventing unauthorized entry to the AOA & preventing the improper movement of pedestrians or vehicles on the airport. In this section, focus on mechanisms to prevent construction vehicles and workers traveling to and from the worksite from unauthorized entry into movement areas. Specify locations of parking for both employee vehicles and construction equipment, and routes for access and haul roads. In most cases, this will best be accomplished by attaching a drawing. Quote from AC 150/5210-5 specific requirements for contractor vehicles rather than referring to the AC as a whole, and include special requirements for identifying Hazardous Material (HAZMAT) vehicles. Quote from, rather than incorporate by reference, AC 150/5210-20 as appropriate to address the airport's rules for ground vehicle operations, including its training program. Discuss the airport's recordkeeping system listing authorized vehicle operators.

c. Two-Way Radio Communications. Include a special section to identify all individuals who are required to maintain communications with Air Traffic (AT) at airports with active towers, or monitor Common Traffic Advisory Frequencies (CTAF) at airports without or with closed ATCT. Include training requirements for all individuals required to communicate with AT. Individuals required to monitor AT frequencies should also be identified. If construction employees are also required to communicate by radio with Airport Operations, this procedure should be described in detail. Usage of vehicle mounted radios and/or portable radios should be addressed. Communication procedures for the event of disabled radio communication (that is, light signals, telephone numbers, others) must be included. All radio frequencies should be identified (Tower, Ground Control, CTAF, UNICOM, ATIS, and so on).

d. Airport Security. Address security as it applies to vehicle and pedestrian operations. Discuss TSA requirements, security badging requirements, perimeter fence integrity, gate security, and other needs. Attach drawings to graphically indicate secured and/or Security Identification Display Areas (SIDA), perimeter fencing, and available access points.

311. Wildlife Management. Discuss in this section wildlife management procedures. Describe the maintenance of existing wildlife mitigation devices, such as perimeter fences, and procedures to limit wildlife attractants. Include procedures to notify Airport Operations of wildlife encounters. Include a reference to paragraph 310 for security (wildlife) fence integrity maintenance as required.

312. Foreign Object Debris (FOD) Management. In this section, discuss methods to control and monitor FOD: worksite housekeeping, ground vehicle tire inspections, runway sweeps, and so on. Include a reference to paragraph 315 for inspection requirements as required.

313. Hazardous Materials (HAZMAT) Management. Describe in this section HAZMAT management procedures: fuel deliveries, spill recovery procedures, Material Safety Data Sheet (MSDS) availability, and other considerations. Any specific airport HAZMAT restrictions should also be identified. Include a reference to paragraph 310 for HAZMAT vehicle identification requirements. Quote from, rather than incorporate by reference, AC 150/5320-15.

314. Notification of Construction Activities. List in this section the names and telephone numbers of points of contact for all parties affected by the construction project. We recommend a single list that includes all telephone numbers required under this section. Include emergency notification procedures for representatives of all parties potentially impacted by construction. Identify individual representatives – and at least one alternate – for each party. List both on-duty and off-duty contact information for each individual, including individuals responsible for emergency maintenance of airport construction hazard lighting and barricades. Describe procedures to coordinate immediate response to events that might adversely affect the operational safety of the airport (such as interrupted NAVAID service).

Explain requirements for and the procedures for the issuance of Notices to Airmen (NOTAMs), notification to FAA required by 14 CFR Part 77 and Part 157 and in the event of affected NAVAIDs. For NOTAMs, identify an individual, and at least one alternate, responsible for issuing and cancelling each specific type of Notice to Airmen (NOTAM) required. Detail notification methods for police, fire fighting, and medical emergencies. This may include 911, but should also include direct phone numbers of local police departments and nearby hospitals. The local Poison Control number should be listed. Procedures regarding notification of Airport Operations and/or the ARFF Department of such emergencies should be identified, as applicable. If airport radio communications are identified as a means of emergency notification, include a reference to paragraph 310. Differentiate between emergency and nonemergency notification of ARFF personnel, the latter including activities that affect ARFF water supplies and access roads. Identify the primary ARFF contact person and at least one alternate. If notification is to be made through Airport Operations, then detail this procedure. Include a method of confirmation from the ARFF department.

315. Inspection Requirements. Describe in this section inspection requirements to ensure airfield safety compliance. Include a requirement for routine inspections by the resident engineer (RE) and the construction contractors. If the engineering consultants and/or contractors have a Safety Officer who will conduct such inspections, identify this individual. Describe procedures for special inspections, such as those required to reopen areas for aircraft operations. Part 139 requires daily airfield inspections at certificated airports, but these may need to be more frequent when construction is in progress. Discuss the role of such inspections on areas under construction. Include a requirement to immediately remedy any deficiencies, whether caused by negligence, oversight, or project scope change.

316. Underground Utilities. Explain how existing underground utilities will be located and protected. Identify each utility owner and include contact information for each company/agency in the master list. Address emergency response procedures for damaged or disrupted utilities. Include a reference to paragraph 314 above for notification of utility owners of accidental utility disruption as required.

317. Penalties. Describe in this section specific penalties imposed for noncompliance with airport rules and regulations, including the CSPP: SIDA violations, Vehicle/Pedestrian Deviations (VPD), and others.

318. Special Conditions. Identify any special conditions that may trigger specific safety mitigation actions outlined in this CSPP: low visibility operations, snow removal, aircraft in distress, aircraft accident, security breach, VPD, and other activities requiring construction suspension/resumption. Include a reference to paragraph 310 above for compliance with airport safety and security measures and for radio communications as required. Include a reference to paragraph 319 below for emergency notification of all involved parties, including police/security, ARFF, and medical services.

319. Runway and Taxiway Visual Aids. Include marking, lighting, signs, and visual NAVAIDs. Detail temporary runway and taxiway marking, lighting, signs, and visual NAVAIDs required for the construction. Discuss existing marking, lighting, signs, and visual NAVAIDs that are temporarily, altered, obliterated, or shut down. Consider non-federal facilities and address requirements for reimbursable agreements necessary for alteration of FAA facilities and for necessary flight checks. Identify temporary TORA signs or runway distance remaining signs if appropriate. Identify required temporary visual NAVAIDs such as REIL or PAPI. Quote from, rather than incorporate by reference, AC 150/5340-1, Standards for Airport Markings, AC 150/5340-18, Standards for Airport Sign Systems, and AC 150/5340-30, as required. Attach drawings to graphically indicate proposed marking, lighting, signs, and visual NAVAIDs.

320. Marking and Signs for Access Routes. Detail plans for marking and signs for vehicle access routes. To the extent possible, signs should be in conformance with the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and/or State highway specifications, not hand lettered. Detail any modifications to the guidance in the MUTCD necessary to meet frangibility/height requirements.

321. Hazard Marking and Lighting. Specify all marking and lighting equipment, including when and where each type of device is to be used. Specify maximum gaps between barricades and the maximum spacing of hazard lighting. Identify one individual and at least one alternate responsible for maintenance of hazard marking and lighting equipment in the master telephone list. Include a reference to paragraph 314 above. Attach drawings to graphically indicate the placement of hazard marking and lighting equipment.

322. Protection of Runway and Taxiway Safety Areas. This section should focus exclusively on procedures for protecting all safety areas, including those altered by the construction: methods of demarcation, limit of access, movement within safety areas, stockpiling and trenching restrictions, and so on. Reference AC 150/5300-13: Airport Design as required. Include a reference to paragraph 310 above for procedures regarding vehicle and personnel movement within safety areas. Include a reference to paragraph 310 above for material stockpile restrictions as required. Detail requirements for trenching, excavations, and backfill. Include a reference to paragraph 321 for hazard marking and lighting devices used to identify open excavations as required. If runway and taxiway closures are proposed to protect safety areas, or if temporary displaced thresholds and/or revised declared distances are used to provide adequate Runway Safety Area, include a reference to paragraphs 314 and 319 above. Detail procedures for protecting the runway OFZ, runway OFA, taxiway OFA and runway approach surfaces including those altered by the construction: methods of demarcation, limit of cranes, storage of equipment, and so on. Quote from, rather than incorporate by reference, AC 150/5300-13: Airport Design as required. Include a reference to paragraph 323 for height (i.e. crane) restrictions as required. One way to address the height of equipment that will move during the project is to establish a three-dimensional “box” within which equipment will be confined that can be studied as a single object. Attach drawings to graphically indicate the safety area, OFZ, and OFA boundaries.

323. Other Limitations on Construction. This section should describe what limitations must be applied to each area of work and when each limitation will be applied: limitations due to airport operations, height (i.e. crane) restrictions, areas which cannot be worked at simultaneously, day/night work restrictions, winter construction, and other limitations. Include a reference to paragraph 307 above for project phasing requirements based on construction limitations as required.

Appendix 1. Related Reading Material

Obtain the latest version of the following free publications from the FAA on its Web site at <http://www.faa.gov/airports/>.

A	Title and Description
AC 150/5200-28	Notices to Airmen (NOTAMs) for Airport Operators
	Guidance for using the NOTAM System in airport reporting.
AC 150/5200-30	Airport Winter Safety and Operations
	Guidance for airport owners/operators on the development of an acceptable airport snow and ice control program and on appropriate field condition reporting procedures.
AC 150/5200-33	Hazardous Wildlife Attractants On or Near Airports
	Guidance on locating certain land uses that might attract hazardous wildlife to public-use airports.
AC 150/5210-5	Painting, Marking, and Lighting of Vehicles Used on an Airport.
	Guidance, specifications, and standards for painting, marking, and lighting vehicles operating in the airport air operations areas.
AC 150/5210-20	Ground Vehicle Operations on Airports
	Guidance to airport operators on developing ground vehicle operation training programs.
AC 150/5300-13	Airport Design
	FAA standards and recommendations for airport design, establishes approach visibility minimums as an airport design parameter, and contains the Object Free area and the obstacle free-zone criteria.
AC 150/5310-24	Airport Foreign Object Debris Management
	Guidance for developing and managing an airport foreign object debris (FOD) program
AC 150/5220-4	Water Supply Systems for Aircraft Fire and Rescue Protection.
	Guidance on selecting a water source and meeting standards for a distribution system to support aircraft rescue and fire fighting service operations on airports.
AC 150/5320-15	Management of Airport Industrial Waste
	Basic information on the characteristics, management, and regulations of industrial wastes generated at airports. Guidance for developing a Storm Water Pollution Prevention Plan (SWPPP) that applies best management practices to eliminate, prevent, or reduce pollutants in storm water runoff with particular airport industrial activities.
AC 150/5340-1	Standards for Airport Markings
	FAA standards for markings used on airport runways, taxiways, and aprons.
AC 150/5340-18	Standards for Airport Sign Systems
	FAA standards for the siting and installation of signs on airport runways and taxiways.
AC 150/5345-28	Precision Approach Path Indicator (PAPI) Systems
	FAA standards for PAPI systems, which provide pilots with visual glide slope guidance during approach for landing.

A	Title and Description
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
	Guidance and recommendations on the installation of airport visual aids.
AC 150/5345-39	Specification for L-853, Runway and Taxiway Retroreflective Markers
AC 150/5345-44	Specification for Runway and Taxiway Signs
	FAA specifications for unlighted and lighted signs for taxiways and runways.
AC 150/5345-53	Airport Lighting Certification Program
	Details on the Airport Lighting Equipment Certification Program (ALECP).
AC 150/5345-50	Specification for Portable Runway and Taxiway Lights
	FAA standards for portable runway and taxiway lights and runway end identifier lights for temporary use to permit continued aircraft operations while all or part of a runway lighting system is inoperative.
AC 150/5345-55	Specification for L-893, Lighted Visual Aid to Indicate Temporary Runway Closure
AC 150/5370-10	Standards for Specifying Construction of Airports
	Standards for construction of airports, including earthwork, drainage, paving, turfing, lighting, and incidental construction.
FAA Order 5200.11	FAA Airports (ARP) Safety Management System (SMS)
	Basics for implementing SMS within ARP. Includes roles and responsibilities of ARP management and staff as well as other FAA lines of business that contribute to the ARP SMS.
FAA Certalert 98-05	Grasses Attractive to Hazardous Wildlife
	Guidance on grass management and seed selection.
FAA Form 7460-1	Notice of Proposed Construction or Alteration
FAA Form 7480-1	Notice of Landing Area Proposal

Obtain the latest version of the following free publications from the Electronic Code of Federal Regulations at <http://ecfr.gpoaccess.gov/>.

Title 14 CFR Part 139	Certification of Airports
Title 49 CFR Part 1542	Airport Security

Obtain the latest version of the Manual on Uniform Traffic Control Devices from the Federal Highway Administration at <http://mutcd.fhwa.dot.gov/>.

Appendix 2. Definition of Terms

T	Definition
7460-1	Notice Of Proposed Construction Or Alteration. For on-airport projects, the form submitted to the FAA regional or airports division office as formal written notification of any kind of construction or alteration of objects that affect navigable airspace, as defined in 14 CFR Part 77, safe, efficient use, and preservation of the navigable airspace. (See guidance available on the FAA web site at oeaaa.faa.gov .) The form may be downloaded at http://www.faa.gov/airports/resources/forms/ , or filed electronically at: https://oeaaa.faa.gov .
7480-1	Notice Of Landing Area Proposal. Form submitted to the FAA Airports Regional Division Office or Airports District Office as formal written notification whenever a project without an airport layout plan on file with the FAA involves the construction of a new airport; the construction, realigning, altering, activating, or abandoning of a runway, landing strip, or associated taxiway; or the deactivation or abandoning of an entire airport. The form may be downloaded at http://www.faa.gov/airports/resources/forms/ .
AC	Advisory Circular
ACRC	Aircraft Reference Code
ACSI	Airport Certification Safety Inspector
ADG	Airplane Design Group
AIP	Airport Improvement Program
ALECP	Airport Lighting Equipment Certification Program
ANG	Air National Guard
AOA	Air Operations Area. Any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operations area includes such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runways, taxiways, or aprons.
ARFF	Aircraft Rescue and Fire Fighting
ARP	FAA Office of Airports
ASDA	Accelerate-Stop Distance Available
ATCT	Airport Traffic Control Tower
ATIS	Automatic Terminal Information Service
ATO	Air Traffic Organization
Certificated Airport	An airport that has been issued an Airport Operating Certificate by the FAA under the authority of 14 CFR Part 139, Certification of Airports.
CFR	Code of Federal Regulations
Construction	The presence and movement of construction-related personnel, equipment, and materials in any location that could infringe upon the movement of aircraft.
CSPP	Construction Safety And Phasing Plan. 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.

T	Definition
CTAF	Common Traffic Advisory Frequency
Displaced Threshold	A threshold that is located at a point on the runway other than the designated beginning of the runway. The portion of pavement behind a displaced threshold is available for takeoffs in either direction or landing from the opposite direction.
DOT	Department of Transportation
EPA	Environmental Protection Agency
FOD	Foreign Object Debris
HAZMAT	Hazardous Materials
IFR	Instrument Flight Rules
ILS	Instrument Landing System
LDA	Landing Distance Available
LOC	Localizer antenna array
Movement Area	The runways, taxiways, and other areas of an airport that are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading aprons and aircraft parking areas (reference 14 CFR Part 139).
MSDS	Material Safety Data Sheet
MUTCD	Manual on Uniform Traffic Control Devices
NAVAID	Navigation Aid
NAVAID Critical Area	An area of defined shape and size associated with a NAVAID that must remain clear and graded to avoid interference with the electronic signal.
Non-Movement Area	The area inside the airport security fence exclusive of the Movement Area. It is important to note that the non-movement area includes pavement traversed by aircraft.
NOTAM	Notices to Airmen
Obstruction	Any object/obstacle exceeding the obstruction standards specified by 14 CFR Part 77, subpart C.
OE / AAA	Obstruction Evaluation / Airport Airspace Analysis
OFA	Object Free Area. An area on the ground centered on the runway, taxiway, or taxi lane centerline provided to enhance safety of aircraft operations by having the area free of objects except for those objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. (See AC 150/5300-13, for additional guidance on OFA standards and wingtip clearance criteria.)
OFZ	Obstacle Free Zone. The airspace below 150 ft (45 m) above the established airport elevation and along the runway and extended runway centerline that is required to be clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance protection for aircraft landing or taking off from the runway and for missed approaches. The OFZ is subdivided as follows: Runway OFZ, Inner Approach OFZ, Inner Transitional OFZ, and Precision OFZ. Refer to AC 150/5300-13 for guidance on OFZ.
OSHA	Occupational Safety and Health Administration
P&R	Planning and Requirements Group

T	Definition
PAPI	Precision Approach Path Indicators
PFC	Passenger Facility Charge
PLASI	Pulse Light Approach Slope Indicators
Project Proposal Summary	A clear and concise description of the proposed project or change that is the object of Safety Risk Management.
RE	Resident Engineer
REIL	Runway End Identifier Lights
RNAV	Area Navigation
ROFA	Runway Object Free Area
RSA	Runway Safety Area. A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway, in accordance with AC 150/5300-13.
SIDA	Security Identification Display Area
SMS	Safety Management System
SPCD	Safety Plan Compliance Document. Details developed and submitted by a contractor to the airport operator for approval providing details on how the performance of a construction project will comply with the CSPP.
SRM	Safety Risk Management
Taxiway Safety Area	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway, in accordance with AC 150/5300-13.
TDG	Taxiway Design Group
Temporary	Any condition that is not intended to be permanent.
Temporary Runway End	The beginning of that portion of the runway available for landing and taking off in one direction, and for landing in the other direction. Note the difference from a displaced threshold.
Threshold	The beginning of that portion of the runway available for landing. In some instances, the landing threshold may be displaced.
TODA	Takeoff Distance Available
TOFA	Taxiway Object Free Area
TORA	Takeoff Run Available. The length of the runway less any length of runway unavailable and/or unsuitable for takeoff run computations. See AC 150/5300-13 for guidance on declared distances.
TSA	Taxiway Safety Area Transportation Security Administration
UNICOM	A radio communications system of a type used at small airports.
VASI	Visual Approach Slope Indicators

T	Definition
VGSI	Visual Glide Slope Indicator. A device that provides a visual glide slope indicator to landing pilots. These systems include precision approach path indicators (PAPI), visual approach slope indicators (VASI), and pulse light approach slope indicators (PLASI).
VFR	Visual Flight Rules
VOR	VHF Omnidirectional Radio Range
VPD	Vehicle / Pedestrian Deviation

Appendix 3. Safety and Phasing Plan Checklist

This appendix is keyed to Section 2. Plan Requirements. In the electronic version of this AC, clicking on the paragraph designation in the Reference column will access the applicable paragraph. There may be instances where the CSPP requires provisions that are not covered by the list in this appendix.

This checklist is intended as an aid, not as a required submittal.

Coordination	Reference	Addressed			Remarks
General Considerations					
Requirements for predesign, prebid, and preconstruction conferences to introduce the subject of airport operational safety during construction are specified.	205	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Operational safety is a standing agenda item for construction progress meetings.	205	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Scheduling of the construction phases is properly addressed.	206	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Areas and Operations Affected by Construction Activity					
Drawings showing affected areas are included.	207.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Closed or partially closed runways, taxiways, and aprons are depicted on drawings.	207.a(1)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Access routes used by ARFF vehicles affected by the project are addressed.	207.a(2)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Access routes used by airport and airline support vehicles affected by the project are addressed.	207.a(3)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Underground utilities, including water supplies for fire fighting and drainage.	207.a(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Approach/departure surfaces affected by heights of temporary objects are addressed.	207.a(5)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads are properly depicted on drawings.	207.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Temporary changes to taxi operations are addressed.	207.b(1)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

Coordination	Reference	Addressed			Remarks
Detours for ARFF and other airport vehicles are identified.	207.b(2)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Maintenance of essential utilities and underground infrastructure is addressed.	207.b(3)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Temporary changes to air traffic control procedures are addressed.	207.b(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
NAVAIDS					
Critical areas for NAVAIDs are depicted on drawings.	208	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Effects of construction activity on the performance of NAVAIDS, including unanticipated power outages, are addressed.	208	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Protection of NAVAID facilities is addressed.	208	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The required distance and direction from each NAVAID to any construction activity is depicted on drawings.	208	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Procedures for coordination with FAA ATO/Technical Operations, including identification of points of contact, are included.	208, 213.a, 213.e(3)(a), 218.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Contractor Access					
The CSPP addresses areas to which contractor will have access and how the areas will be accessed.	209	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The application of 49 CFR Part 1542 Airport Security, where appropriate, is addressed.	209	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The location of stockpiled construction materials is depicted on drawings.	209.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The requirement for stockpiles in the ROFA to be approved by FAA is included.	209.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Requirements for proper stockpiling of materials are included.	209.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

Coordination	Reference	Addressed			Remarks
Construction site parking is addressed.	209.b(1)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Construction equipment parking is addressed.	209.b(2)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Access and haul roads are addressed.	209.b(3)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
A requirement for marking and lighting of vehicles to comply with AC 150/5210-5, Painting, Marking and Lighting of Vehicles Used on an Airport, is included.	209.b(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Proper vehicle operations, including requirements for escorts, are described.	209.b(5), 209.b(6)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Training requirements for vehicle drivers are addressed.	209.b(7)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Two-way radio communications procedures are described.	209.b(9)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Maintenance of the secured area of the airport is addressed.	209.b(10)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Wildlife Management					
The airport operator's wildlife management procedures are addressed.	210	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Foreign Object Debris Management					
The airport operator's FOD management procedures are addressed.	211	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Hazardous Materials Management					
The airport operator's hazardous materials management procedures are addressed.	212	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Notification of Construction Activities					
Procedures for the immediate notification of airport user and local FAA of any conditions adversely affecting the operational safety of the airport are detailed.	213	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

Coordination	Reference	Addressed			Remarks
Maintenance of a list by the airport operator of the responsible representatives/points of contact for all involved parties and procedures for contacting them 24 hours a day, seven days a week is specified.	213.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
A list of local ATO/Technical Operations personnel is included.	213.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
A list of ATCT managers on duty is included.	213.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
A list of authorized representatives to the OCC is included.	213.b	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Procedures for coordinating, issuing, maintaining and cancelling by the airport operator of NOTAMS about airport conditions resulting from construction are included.	208, 213.b, 218.b(4)(i)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Provision of information on closed or hazardous conditions on airport movement areas by the airport operator to the OCC is specified.	213.b	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Emergency notification procedures for medical, fire fighting, and police response are addressed.	213.c	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Coordination with ARFF personnel for non-emergency issues is addressed.	213.d	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Notification to the FAA under 14 CFR parts 77 and 157 is addressed.	213.e	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Reimbursable agreements for flight checks and/or design and construction for FAA owned NAVAIDs are addressed.	213.e(3)(b)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Inspection Requirements					
Daily inspections by both the airport operator and contractor are specified.	214.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Final inspections at certificated airports are specified when required.	214.b	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Underground Utilities					
Procedures for protecting existing underground facilities in excavation areas are described.	215	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

Coordination	Reference	Addressed			Remarks
Penalties					
Penalty provisions for noncompliance with airport rules and regulations and the safety plans are detailed.	216	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Special Conditions					
Any special conditions that affect the operation of the airport or require the activation of any special procedures are addressed.	217	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Runway and Taxiway Visual Aids - Marking, Lighting, Signs, and Visual NAVAIDS					
The proper securing of temporary airport markings, lighting, signs, and visual NAVAIDS is addressed.	218.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Frangibility of airport markings, lighting, signs, and visual NAVAIDS is specified.	218.a, 218.c, 219, 220.b(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The requirement for markings to be in compliance with AC 150/5340-1, Standards for Airport Markings is specified.	218.b	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The requirement for lighting to conform to AC 150/5340-30, Design and Installation Details for Airport Visual Aids, AC 150/5345-50, Specification for Portable Runway and Taxiway Lights, and AC 150/5345-53 Airport Lighting Certification Program, is specified.	218.b(1)(f)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The use of a lighted X is specified where appropriate.	218.b(1)(b), 218.b(3)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The requirement for signs to conform to AC 150/5345-44, Specification for Runway and Taxiway Signs, AC 50/5340-18, Standards for Airport Sign Systems, and AC 150/5345-53, Airport Lighting Certification Program, is specified.	218.c	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Marking and Signs For Access Routes					
The CSPP specifies that pavement markings and signs intended for construction personnel should conform to AC 150/5340-18 and, to the extent practicable, with the MUTCD and/or State highway specifications.	219	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Hazard Marking and Lighting					
Prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles are specified.	220.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

Coordination	Reference	Addressed			Remarks
Hazard marking and lighting are specified to identify open manholes, small areas under repair, stockpiled material, and waste areas.	220.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The CSPP considers less obvious construction-related hazards.	220.a	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Equipment that poses the least danger to aircraft but is sturdy enough to remain in place when subjected to typical winds, prop wash and jet blast is specified.	220.b(1)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The spacing of barricades is specified such that a breach is physically prevented barring a deliberate act.	220.b(1)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Red lights meeting the luminance requirements of the State Highway Department are specified.	220.b(2)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Barricades, temporary markers, and other objects placed and left in areas adjacent to any open runway, taxiway, taxi lane, or apron are specified to be as low as possible to the ground, and no more than 18 in high.	220.b(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Barricades marked with diagonal, alternating orange and white stripes are specified to indicate construction locations in which no part of an aircraft may enter.	220.b(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Highly reflective barriers with lights are specified to barricade taxiways leading to closed runways.	220.b(5)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Markings for temporary closures are specified.	220.b(5)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The provision of a contractor's representative on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades is specified.	220.b(7)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Protection of Runway and Taxiway Safety Areas					
The CSPP clearly states that no construction may occur within a safety area while the associated runway or taxiway is open for aircraft operations.	221.a(1), 221.c(1)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The CSPP specifies that the airport operator coordinates the adjustment of RSA or TSA dimensions with the ATCT and the appropriate FAA Airports Regional or District Office and issues a local NOTAM.	221.a(2), 221.c(2)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

Coordination	Reference	Addressed			Remarks
Procedures for ensuring adequate distance for protection from blasting operations, if required by operational considerations, are detailed.	221.c(3)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The CSPP specifies that open trenches or excavations are not permitted within a safety area while the associated runway or taxiway is open.	221.a(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Appropriate covering of excavations in the RSA or TSA that cannot be backfilled before the associated runway or taxiway is open is detailed.	221.a(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The CSPP includes provisions for prominent marking of open trenches and excavations at the construction site.	221.a(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Grading and soil erosion control to maintain RSA/TSA standards are addressed.	221.c(5)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The CSPP specifies that equipment is to be removed from the ROFA when not in use.	221.b	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The CSPP clearly states that no construction may occur within a taxiway safety area while the taxiway is open for aircraft operations.	221.c	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Appropriate details are specified for any construction work to be accomplished in a taxiway object free area.	221.d	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Measures to ensure that personnel, material, and/or equipment do not penetrate the OFZ or threshold siting surfaces while the runway is open for aircraft operations are included.	221.e	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Provisions for protection of runway approach/departure areas and clearways are included.	221.f	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
Other Limitations on Construction					
The CSPP prohibits the use of open flame welding or torches unless adequate fire safety precautions are provided and the airport operator has approved their use.	222.a(2)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The CSPP prohibits the use of flare pots within the AOA at any time.	222.a(4)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
The CSPP prohibits the use of electrical blasting caps on or within 1,000 feet (300 m) of the airport property.	222.a(3)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	

Appendix 4. Construction Project Daily Safety Inspection Checklist

The situations identified below are potentially hazardous conditions that may occur during airport construction projects. Safety area encroachments, unauthorized and improper ground vehicle operations, and unmarked or uncovered holes and trenches near aircraft operating surfaces pose the most prevalent threats to airport operational safety during airport construction projects. The list below is one tool that the airport operator or contractor may use to aid in identifying and correcting potentially hazardous conditions. It should be customized as appropriate for each project.

Potentially Hazardous Conditions

Item	Action Required	or	None
Excavation adjacent to runways, taxiways, and aprons improperly backfilled.			<input type="checkbox"/>
Mounds of earth, construction materials, temporary structures, and other obstacles near any open runway, taxiway, or taxi lane; in the related Object Free area and aircraft approach or departure areas/zones; or obstructing any sign or marking.			<input type="checkbox"/>
Runway resurfacing projects resulting in lips exceeding 3 in (7.6 cm) from pavement edges and ends.			<input type="checkbox"/>
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.			<input type="checkbox"/>
Equipment or material near NAVAIDs that may degrade or impair radiated signals and/or the monitoring of navigation and visual aids. Unauthorized or improper vehicle operations in localizer or glide slope critical areas, resulting in electronic interference and/or facility shutdown.			<input type="checkbox"/>
Tall and especially relatively low visibility units (that is, equipment with slim profiles) — cranes, drills, and similar objects — located in critical areas, such as OFZ and approach zones.			<input type="checkbox"/>
Improperly positioned or malfunctioning lights or unlighted airport hazards, such as holes or excavations, on any apron, open taxiway, or open taxi lane or in a related safety, approach, or departure area.			<input type="checkbox"/>
Obstacles, loose pavement, trash, and other debris on or near AOA. Construction debris (gravel, sand, mud, paving materials) on airport pavements may result in aircraft propeller, turbine engine, or tire damage. Also, loose materials may blow about, potentially causing personal injury or equipment damage.			<input type="checkbox"/>

Item	Action Required	or	None
Inappropriate or poorly maintained fencing during construction intended to deter human and animal intrusions into the AOA. Fencing and other markings that are inadequate to separate construction areas from open AOA create aviation hazards.			<input type="checkbox"/>
Improper or inadequate marking or lighting of runways (especially thresholds that have been displaced or runways that have been closed) and taxiways that could cause pilot confusion and provide a potential for a runway incursion. Inadequate or improper methods of marking, barricading, and lighting of temporarily closed portions of AOA create aviation hazards.			<input type="checkbox"/>
Wildlife attractants — such as trash (food scraps not collected from construction personnel activity), grass seeds, tall grass, or standing water — on or near airports.			<input type="checkbox"/>
Obliterated or faded temporary markings on active operational areas.			<input type="checkbox"/>
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the approach to any open runway pose aviation hazards.			<input type="checkbox"/>
Failure to issue, update, or cancel NOTAMs about airport or runway closures or other construction related airport conditions.			<input type="checkbox"/>
Failure to mark and identify utilities or power cables. Damage to utilities and power cables during construction activity can result in the loss of runway / taxiway lighting; loss of navigation, visual, or approach aids; disruption of weather reporting services; and/or loss of communications.			<input type="checkbox"/>
Restrictions on ARFF access from fire stations to the runway / taxiway system or airport buildings.			<input type="checkbox"/>
Lack of radio communications with construction vehicles in airport movement areas.			<input type="checkbox"/>
Objects, regardless of whether they are marked or flagged, or activities anywhere on or near an airport that could be distracting, confusing, or alarming to pilots during aircraft operations.			<input type="checkbox"/>
Water, snow, dirt, debris, or other contaminants that temporarily obscure or derogate the visibility of runway/taxiway marking, lighting, and pavement edges. Any condition or factor that obscures or diminishes the visibility of areas under construction.			<input type="checkbox"/>
Spillage from vehicles (gasoline, diesel fuel, oil) on active pavement areas, such as runways, taxiways, aprons, and airport roadways.			<input type="checkbox"/>

Item	Action Required	or	None
Failure to maintain drainage system integrity during construction (for example, no temporary drainage provided when working on a drainage system).			<input type="checkbox"/>
Failure to provide for proper electrical lockout and tagging procedures. At larger airports with multiple maintenance shifts/workers, construction contractors should make provisions for coordinating work on circuits.			<input type="checkbox"/>
Failure to control dust. Consider limiting the amount of area from which the contractor is allowed to strip turf.			<input type="checkbox"/>
Exposed wiring that creates an electrocution or fire ignition hazard. Identify and secure wiring, and place it in conduit or bury it.			<input type="checkbox"/>
Site burning, which can cause possible obscuration.			<input type="checkbox"/>
Construction work taking place outside of designated work areas and out of phase.			<input type="checkbox"/>

APPENDIX

B

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Construction Safety and Phasing Plan

Crack Seal and Re-Marking
JACKSON COUNTY AIRPORT AUTHORITY
Jefferson, Georgia

Prepared by:
W.K. Dickson & Co., Inc.
#20160013.00.AT
March 2016

This project includes the clearing of obstructions at the airport. The project will include removal of trees on the airfield away from the runway.

This Construction Safety and Phasing Plan (CSPP) has been prepared in accordance with FAA Advisory Circular 150/5370-2F, Operational Safety on Airports During Construction.

1. COORDINATION

- a. Contractor Progress Meetings. A Preconstruction Conference will be held prior to the start of construction. Weekly Construction Progress Meetings will be set by the Engineer's resident project representative and held with the construction contractor. Operational safety is a standing agenda item for all construction progress meetings throughout the project activities.
- b. Scope or Schedule Changes. Changes in the scope or duration of the project may necessitate revisions to the CSPP, and will require review and approval by the Airport Sponsor and GDOT.
- c. FAA ATO Coordination. Early coordination with the FAA ATO is required to schedule airway facility shutdowns and restarts. Runway 5 approach procedures will be affected when Runway 5-17 is closed to aircraft operations. There will be no grading or marking changes to the existing runway in the project, so no re-commissioning flight checks will be needed.

2. PHASING

- a. Phase Elements. There will be one construction phase during the project:
 - (1) Obstruction removal will not affect airport operations and therefore will not require any closures or restrictions to airport operations.
- b. Construction Safety Drawings. The area to be closed is defined in detail on Plan Sheet 2 Project Layout and Construction Safety Plan. Notes detail the duration of closures, the Contractor's Staging Area, construction access and haul routes, required hazard lighting for closed areas, and installation of lighted runway closure markers. The project specifications list the lead times for required notifications to close active pavement areas.

There is no ATCT or ARFF station on the airport. There are no active NAVAID system located on the airport. There will be no changes to the runway lighting or marking during construction. Existing runway edge lights will be out of service during the runway closure. Since the runway will be closed, there are no declared distances for runway operations. These referenced drawings show the operational safety procedures and methods in affected areas that were developed for the construction phase.

These are supplemented by the technical specifications and AC 150/5370-2F, which is enclosed with the project specifications.

- c. Dimensional Standards for the Airport are: Runway 17-35
 - Runway Design Code: B-I
 - Runway Safety Area Width (RSA): 120'
 - Runway Object Free Area Width (ROFA): 400'
 - Taxiway Safety Area Width (TSA): 49'
 - Taxiway Object Free Area Width (TOFA): 89'
 - Runway Obstacle Free Zone (ROFZ): 250'
 - Runway Approach/Departure Surfaces: See Airport Layout Plan

3. AREAS AND OPERATIONS AFFECTED BY THE CONSTRUCTION ACTIVITY.

- a. Identification of Affected Areas. The runway and taxiways will be closed to aircraft throughout construction. The affected areas include Runway 17-35, parallel taxiway and connectors, and access to existing hangars. See the Operational Effects Table below.
- b. Mitigation of effects.

During construction the entire airfield (runway and taxiways) will be closed to air traffic during the project. Temporary lighted L-893 Runway Closure Markers will be placed over the runway numerals at each runway end. If Runway will be re-opened daily at the end of the work period, alternative runway closure markers may be used in accordance with the notes on the plans. Barriers will be placed across all taxiway access points to prevent aircraft from entering the construction area.

Prior to opening the closed runway, the Contractor shall restore grade of all disturbed areas within the RSA. The surface of the safety area must be smoothly graded with no trenches or holes remaining.

- c. There are no existing ARFF routes, or routes for airline operations at the Airport. There will be no interruption of utility services like water, power and telephone. There will be no changes to the approach/departure surfaces for Runway 5-23 when the runway is open. A NOTAM will be issued by the Airport Manager for temporary runway and taxiway closure conditions.

OPERATIONAL EFFECTS TABLE

**Project: Crack Seal and Re-Marking
Jackson County Airport Authority, Jefferson, GA**

Scope of work: Crack Seal and Re-Mark Runway and Taxiway

<u>Operational Requirements</u>	<u>Normal</u>	<u>Runway Closure</u>
ATCT	None	None
ARFF Index	None	None
Special Conditions	None	None

4. PROTECTION OF NAVIGATIONAL AIDS (NAVAIDS)

There are no navigational aids located on the airport.

5. CONTRACTOR ACCESS

- a. Location of Stockpiled Construction Materials. A contractor's staging and stockpile area has been located outside of the RSA, ROFA, ROFZ, the runway approach and departure surfaces, and the FAR Part 77 surfaces. A 7460-1 determination letter will be acquired for this site.
- b. Vehicle and Pedestrian Operations. Separate access route will be used for access to the construction site so that there will be no crossing of active aircraft areas by construction or pedestrian traffic. These access routes are clear of the RSA, ROFA, ROFZ, and the runway approach and departure surfaces, and will be clearly marked and delineated by the Contractor.
 - (1) Construction site parking must be contained within the contractor's staging area.
 - (2) Contractor's equipment parking must be contained within the contractor's staging area after construction operations are complete for each work day. Maximum equipment height is 15 feet.
 - (3) Access and haul roads are detailed on Sheet 2.
 - (4) Marking and Lighting of Vehicles. The project specifications require that all vehicles within the Airport Operations Area (AOA) will be marked with 36" x 36" flags (orange-and-white checkerboard) and/or flashing yellow lights in accordance with AC 150/5210-5.
 - (5) Vehicle Operations during lost communications and emergency conditions. Vehicle operations will not enter active aircraft areas. Therefore, vehicles and personnel shall exit the construction site by designated access routes in all cases.
 - (6) Required Escorts. Escorts will not be required during this project. CSPP is written so as to not require or allow vehicles or equipment to move through active aircraft areas.
 - (7) Training Requirements. The Engineer will conduct training requirement for vehicle drivers to ensure compliance with the Airport's vehicle rules and regulations. Vehicle drivers will be trained to confirm by personal observation that no aircraft is approaching their position (either in the air or on the ground) when given clearance to cross an active airport pavement (runway, taxiway, or any other area open to airport operations). However, the CSPP is written so as to not require or allow vehicles or equipment to move through active aircraft areas.
 - (8) Two-Way Radio Communication Procedures. The project specifications require that the contractor monitor the UNICOM frequency (122.80 MHz, which is also the CTAF) while in the AOA. However, the CSPP is written so as to not require or allow vehicles or equipment to move through active aircraft areas.
 - (9) Maintenance of the Secured Area of the Airport. There is no secured area for this Airport. There are no badging requirements. The Airport is not subject to 49 CFR Part 1542, Airport Security.

6. WILDLIFE MANAGEMENT

- a. Trash. The Contractor is required to control and continuously remove waste or loose materials that might attract wildlife, including food scraps.
- b. Standing Water. Standing water is not allowed on the construction site.
- c. Tall Grass and Seeds. The Contractor is required to maintain the construction site including grass height, and is required to store seed within an enclosed space. Seeding shall comply with AC 150/5370-10 for seed quality and placement.
- d. Poorly Maintained Fencing and Gates. No fencing or gates within the construction site.

e. Disruption of Existing Wildlife Habitat. No wildlife habitat within the project limits.

7. FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT.

The Contractor may not leave or place foreign object debris (FOD) on or near active aircraft movement areas (Airport Operations Area). Materials tracked on to these areas must be continuously removed during the construction project.

8. HAZARDOUS MATERIALS (HAZMAT) MANAGEMENT

Contract provisions require that all hazardous waste materials will be controlled, handled and disposed of in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. The job site superintendent, who will also be responsible for seeing that these practices are followed, must instruct site personal in these practices.

Material safety data sheets (MSDS's) for each with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS must be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the Erosion, Sedimentation Prevention and Control Plan (ESPCP) file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties must be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

Contractor's equipment parking must be contained within the contractor's staging area after construction operations are complete for each work day. Therefore, all equipment must be fueled on-site within the contractor's staging area.

Petroleum based products. Containers for products such as fuels, lubricants and tars must be inspected daily for leaks and spills. This includes on-site vehicle and machinery daily inspections & regular preventative maintenance of such equipment. Equipment maintenance areas must be located away from state water, natural drains and storm water drainage inlets. In addition, temporary fueling tanks shall have a secondary containment liner to prevent and minimize site contamination. Discharge of oils, fuels and lubricants is prohibited. Proper disposal methods will include collection in a suitable container and disposal as required by local and state regulations.

Paints/finishes/solvents. All products must be stored in tightly sealed original containers when not in use. Excess product may not be discharged to the storm water collection system. Excess product, materials used with these products and product containers must be disposed of according to manufacturer's specifications and recommendations.

Concrete truck washing. No concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water onsite.

Fertilizer/herbicides. These products must be applied at rates that do not exceed the manufacturer's specifications or above the guidelines set forth in the crop establishment or in the GSWCC manual for erosion and sediment control in Georgia. Any storage of these materials must be under roof in sealed containers.

Contractor must implement the spill prevention control and countermeasures (SPCC) plan found within this ESPCP and must train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with Stormwater discharges. If such contact occurs, Stormwater discharge must be contained on site until appropriate measures in compliance with state and federal regulation are taken to dispose of such contaminated Stormwater. It shall be responsibility of the job site superintendent to properly train all personnel in the use of the SPCC plan.

9. NOTIFICATION OF CONSTRUCTION ACTIVITIES

- a. Maintenance of a List of Responsible Representatives/Points of Contact. Points of Contact for all involved parties, and procedures for contacting each of them (including after hours) will be collected by the Engineer at the Preconstruction Conference and distributed to all affected parties.
- b. Notices to Airmen (NOTAM). Only the Airport Manager may initiate or cancel NOTAM's for airport conditions, and is the only entity that can close or open a runway. The Airport Manager will coordinate the issuance, maintenance and cancellation of NOTAM's about airfield conditions resulting from construction operations. There are no FAA facilities on the airport. Required notification periods for NOTAM's are stated in the project specifications, and will be confirmed at the Preconstruction Conference.
- c. Emergency Notification Procedures. Notification procedures and contact numbers for medical, firefighting and police response will be collected at the Preconstruction Conference and distributed by the Contractor. The Contractor is encouraged to invite first responders to the site to review construction activities and access.
- d. Coordination with ARFF Personnel. There is no ARFF station on the airport.
- e. Notification to the FAA.

FAR Part 77: FAA Form 7460-1 will be filed by the Engineer through the OEAAA for the project prior to construction commencement.

FAR Part 157 does not apply to this project.

NAVAIDS: There are no active NAVAIDS (FAA or non-Federal) on the airport.

10. INSPECTION REQUIREMENTS

- a. Daily (or more frequent) Inspections. A full-time resident project representative will be present during construction operations, and will conduct daily inspections. The sample checklist in Appendix 3, Safety & Phasing Plan Checklist will be used for safety inspections. Safety inspections will be conducted whenever a pavement is to be placed into service to ensure that safety areas and object free areas are compliant with FAA standards.
- b. Final Inspections. A final inspection will be conducted when the project is complete.

11. UNDERGROUND UTILITIES.

There are no underground utilities within the construction site, other than the known runway and taxiway edge lighting cables, and PAPI cables. However, the "811" utility location service will be contacted by the Contractor prior to commencement of construction.

12. PENALTIES.

Penalties for noncompliance with Airport rules and regulations and the CSPP include rescission of driving privileges, access to AOA, and removal from Airport property.

13. SPECIAL CONDITIONS.

There are no special conditions applicable to this project.

14. RUNWAY & TAXIWAY VISUAL AIDS. MARKING, LIGHTING, SIGNS & VISUAL NAVAIDS.

- a. General. The Contractor must ensure that lighting, signs and visual NAVAIDS remain on during construction. There will be no partially closed runway or displaced threshold during this project.
- b. Markings. Markings will be in compliance with AC 150/5340-1.

- c. Lighting and visual NAVAIDS. There are existing runway edge lights. The MIRL system will not be turned off.
 - d. Signs. There will be new guidance signs.
15. MARKING AND SIGNS FOR ACCESS ROUTES.
The Contractor shall clearly mark the access and haul routes to prevent construction personnel from entering areas open to aircraft.
16. HAZARD MARKING, LIGHTING AND SIGNAGE.
- a. Purpose. Hazard marking, lighting & signage prevents pilots from entering areas closed to aircraft and prevents construction personnel from entering areas open to aircraft.
 - b. Equipment. Barriers will not be required on this project.
17. PROTECTION OF RUNWAY AND TAXIWAY SAFETY AREAS.
- a. Runway Safety Area (RSA). All work within RSA will be conducted with runway closed.
 - b. Runway Object Free Area (ROFA). All work within the ROFA will be conducted with the runway closed.
 - c. Taxiway Safety Area (TSA). All work within the TSA will be performed with the installation of construction barriers prohibiting access by aircraft to the occupied TSA. All work within the TSA during construction will be conducted with the runway closed.
 - d. Taxiway Object Free Area (TOFA). All work within the TOFA during construction will be conducted with the runway closed.
 - e. Runway Obstacle Free Zone (ROFZ). All work within the ROFZ will be conducted with the runway closed.
 - f. Runway Approach/Departure Surfaces. No construction will be allowed in the active runway approach or departure surfaces. All work within these areas will be conducted with the runway closed. There will be no partial runway closures or displaced thresholds during this project.
18. OTHER LIMITATIONS ON CONSTRUCTION.
- a. Prohibitions. Open flame, flare pots, burning, welding and torches are prohibited.
 - b. Restrictions.
 - (1) The Contractor's equipment will be limited to 15' in height unless a new 7460-1 determination letter is issued for such equipment.
 - (2) If construction is suspended during the project, the CSPP remains in effect.