



Birmingham-Shuttlesworth International Airport (BHM)
Birmingham, Alabama

PROJECT MANUAL

Taxiway Alpha Emergency Patching

FAA AIP No.: AF-064-2025
BAA Project No.: AF064
SARCOR Project No.: 25-E-01-03100

Bidding Information, Forms, Conditions of Contract and Technical Specifications

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DOCUMENT 00 01 00

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DEFINITIONS OF TERMS

Whenever the following terms are used in the Contract Documents, Plans, Specifications, or in any documents or other instruments pertaining to construction, the intent and meaning shall be interpreted as follows:

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

Access Road. The right-of-way, the roadway and all improvements constructed thereon connecting the Airport to a public road or highway.

Addenda. Amendments or additions to the Contract Documents that are added prior to the submission of Bids.

Advertisement. A public announcement, as required by local law, inviting Bids for Work to be performed and materials to be furnished.

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

Air Operations Area. (AOA) For the purpose of these specifications, 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.

Airport. Airport means the area of land or water which is used or intended to be used for the landing and takeoff of aircraft, and includes its buildings and facilities, if any. As used herein, "Airport" means all of the area comprising the Birmingham-Shuttlesworth International Airport.

Application for Payment. The monthly request for payment submitted by the Contractor to the Engineer and OAR containing an itemized applications for payment for Work completed in accordance with the schedule of values or unit price schedule, including, such data required by the Contract Documents substantiating the Contractor's right to payment (such as copies of requisitions from Subcontractors and material suppliers) and reflecting retainage in the amount of ten percent (10%) of the total amount up to fifty percent 50% of the total contract price unless otherwise provided in the Contract Documents or agreed to by the Owner at its sole discretion.

ASTM. The American Society for Testing and Materials.

Award. The acceptance, by the Owner, of the successful Bidder's Proposal.

Bid or Proposal. The written offer of the Bidder (when submitted on the approval proposal form) to perform the contemplated Work and furnish the necessary materials in accordance with the provisions of the Plans and Specifications.

Bidder. Any individual, partnership, firm, corporation or entity, acting directly through a duly authorized representative, who submits a Proposal for the Work contemplated.

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Bid Documents. The documents available to Bidders before submission of Bids, including Drawings, Plans, Specifications, written Instructions to Bidders, Invitation to Bid, Addenda, and the documents, reports and information referenced in such Bid Documents.

Bid Guaranty or Proposal Guaranty. The security furnished with a Proposal to guarantee that the Bidder will enter into a Contract if its Proposal is accepted by the Owner.

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.

Calendar Day. Everyday shown on the calendar.

CBMPP Construction Best Management Practices Plan.

Certification of Payment. The written certification by the Engineer or OAR to the Owner, based upon the Engineer's and OAR's observations at the site and the data comprising the Application for Payment, that the Work has progressed to the point indicated in the Contractor's Application for Payment, that the quality of the Work is in accordance with the Contract Documents, and that Contractor is due to be paid the amount claimed in the Application for Payment.

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.

Claim. A demand or assertion by the Owner or Contractor seeking, as a matter of right, adjustment or interpretation of Contract Document terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be made by written notice pursuant to Subsection 1 of Section 00290.

Contract. The entire and integrated written agreement between the parties hereto which supersedes prior negotiations, representations or agreements, either written or oral. The Contract shall include, but is not limited to: the Advertisement for Bids; the Contract form; the Proposal; the Performance Bond; the Payment Bond; any required insurance certificates; the Specifications; the CBMPP; the Plans, and any Addenda issued to Bidders. The Contract may be amended only by a Contract Modification. The Contract shall also include, if applicable, conformed Contract Documents, which are the Bid Documents that have been revised to incorporate information contained within the Addenda. If the Contract Documents have been conformed, the Contractor is responsible for verifying that the Addenda are accurately incorporated into the Conformed Contract Documents before relying on them for purposes of construction. Conformed Contract Documents are for convenience and do not supersede the information contained within the Contract Documents.

Contract Documents. The executed documents between the Owner and Contractor comprising the Contract.

Contract Item (Pay Item). A specific unit of Work for which a price is provided in the Contract.

Contract Modifications. (a) A written amendment to the Contract signed by both parties, (b) a Change Order, (c) a Construction Change Directive, (d) a Field Change Order, or (e) a written order for a minor change in the Work issued by the Owner.

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 Days or Working Days, the Contract shall be completed by that date.

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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.

Day. Unless specified to the contrary herein, "Day" shall mean a Calendar Day.

DBE. A disadvantaged business enterprise.

Drainage System. The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the Airport area.

Drawings or Plans. The official graphic and pictorial portions of the Contract Documents which show the design, 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 supplementary to the Specifications. The Plans generally include plans, elevations, sections, details, schedules and diagrams.

Engineer. The individual, partnership, firm or corporation duly authorized by the Owner (Sponsor) to be responsible for Engineering supervision of the Contract Work and acting directly or through an authorized representative.

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.

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.

FAA. The Federal Aviation Administration of the U.S. Department of Transportation. When used to designate a person, FAA shall mean the Administrator or its duly authorized representative.

Federal Specifications. The Federal Specifications and Standards, and supplements, amendments, indexes thereto that are prepared and issued by the General Services Administration of the Federal Government.

Final Acceptance. The final acceptance in writing of the Work by the Engineer or OAR after the Final Inspection.

Final Completion. The date on which all of the Work contemplated by the Contract is completed in accordance with the Contract Documents, Plans and Specifications.

Final Inspection. The final inspection of the Work by the Engineer that reveals that all construction provided for and contemplated by the Contract is completed in accordance with the Contract Documents, Plans and Specifications.

Final Payment. The Final Payment under the Contract by the Owner to the Contractor, including release of the Retainage. Final Payment will be made only after all of the conditions and requirements for the close out of the Contract have been satisfied.

Force Account. Work performed on a time and material basis. If the Owner and Contractor cannot reach an agreement on an equitable adjustment to the Contract Price, or to the Contract Price for Work not covered by Unit Price items, or cannot reach an agreement on an equitable Unit Price for additional major Unit Price Work, for the performance of certain Work, then the Work will be performed on a Force Account basis.

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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.

Intention of Terms. Whenever in these Specifications or on the Plans, the words “directed,” “required,” “permitted,” “ordered,” “designated,” “prescribed,” or words of the like are import are used, it shall be understood that the direction, requirement, permission, 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, satisfactory to the Engineer, subject in each case to the final determination of the Owner.

Any reference to a specific requirement of a numbered subsection 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 a specific reference.

In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any," and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

Laboratory. The official testing laboratories of the Owner or such other laboratories as may be designated by the Engineer.

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.

Liquidated Damages. The agreed upon amount of daily damages set forth in Section 00030, Subsection 28 of the Contract that Owner may assess against Contractor if the Work is not substantially completed and finally completed within the time set forth in the Contract Documents.

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 awarded Contract. All other items shall be considered Minor Contract Items.

Materials. Any substance specified for use in the construction of the Contract Work.

NAVAIDS. Include but not be limited to, ASR, UHF, NDB and VHF Receivers and Transmitters, National Weather Service Facilities, Lighting, electric cables and controls relating to such NAVAIDS and facilities and other electric power cables serving other facilities.

Notice of Intent to Award. A written notice to a Bidder by the Owner that Owner intends to Award the Contract to such Bidder.

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.

OAR. The Owner’s authorized representative, being the Director of Planning and Operations and his/her designees, from time to time, including without limitation, any Program Manager.

Owner. The term Owner shall mean Birmingham Airport Authority, an Alabama public corporation. For AIP Contracts, the term “**Sponsor**” shall be used in place of the term Owner.

Pavement. The combined surface course, base course, and subbase course, if any, considered as a single unit.

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Payment Bond. The approved form of security furnished by the Contractor and its Surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the Work.

Performance Bond. The approved form of security furnished by the Contractor and its Surety as a guaranty that the Contractor will complete the Work in accordance with the terms of Contract Documents.

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, supplementary to the specifications.

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

Record Documents. Those documents assembled by the Engineer at the conclusion of the Contractor's performance of construction or service. Record Documents are developed from as-built Drawings, as-built Specifications and any other documents required by the Contractor for closing out the Project.

Runway. The area on the Airport prepared for the landing and takeoff of aircraft.

Specifications. Those portions of the Contract Documents containing the written directions and requirements for materials, Equipment, construction systems, and Workmanship for Work and the performance of related services. 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.

Structures. Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; under drains; electrical ducts, manholes, handholes, Light 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.

Subcontract. A contract between the Contractor and a supplier of materials, equipment or labor for the completion or all or a portion of the Work. All Subcontracts shall be subject to the terms of the Contract, and no Subcontract shall alter or limit the Contractor's liability to the Owner to complete the Work as provided in the Contract.

Subcontractor. A person or entity that enters into a Subcontract with the Contractor.

Subgrade. The soil which forms the Pavement foundation.

Submittals. Shop drawings, samples, mix designs, material certifications, product data and other items or documents required to be submitted by the Contractor for approval of the Engineer or OAR prior to incorporation into the Work.

Substantial Completion. The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents and when all required occupancy permits, if any, have been issued so the Owner can occupy or utilize the Work for its intended use.

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 Work.

Birmingham-Shuttlesworth International Airport - Terminal Apron Concrete Rehabilitation
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Supplemental Agreement. A written agreement between the Contractor and the Owner covering: (a) Work that would increase or decrease the total amount of the awarded Contract, or any Liquidated Damages, by more than 25 percent, such increased or decreased Work being within the scope of the originally awarded Contract; or (b) Work that is not within the scope of the originally awarded Contract.

Surety. The corporation, partnership, or individual, other than the Contractor, executing Payment Books or Performance Bonds which are furnished to the Owner by the Contractor.

Taxiway. For the purpose of this Contract, 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.

Total Contract Price. The total price the Owner will pay to the Contractor for the Work, when fully completed, subject to such additions and deductions as may be provided for in the Contract Documents. The initial Total Contract Price will be set forth by the Contractor in the Bid and will be accepted by the Owner in the Contract Agreement. The Total Contract Price may be changed only on written agreement from time to time as set forth in the Contract Documents.

Work. The construction and services, including the furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations of the Contractor imposed by the Contract Documents, Plans and Specifications. The Work may constitute the whole or a part of the Project.

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. Unless 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.

Other capitalized terms may be defined in other Sections of the Contract Documents. Unless otherwise stated in the Contract Documents, words which have well-known technical, or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

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ADVERTISEMENT FOR BIDS NOTICE

Birmingham-Shuttlesworth International Airport
For
Taxiway Alpha Emergency Patching
AIP Project NO AF-064

SEALED BIDS will be received on behalf of the Birmingham Airport Authority (BAA) at the Authority's Administration Office, located on the Airport's lower-level main terminal building, at the Birmingham - Shuttlesworth International Airport, 5900 Messer Airport Highway, Birmingham, Alabama 35212, until 2:00 p.m. local time on (**August 11, 2025**). Sealed Bids will be opened and publicly read aloud starting 2:00 p.m. in Meeting Room B, situated on the Terminal Building's lower level, adjacent to the Birmingham Police Department Substation, near the escalators. The bids shall be submitted in a sealed envelope and/or container plainly marked on the outside with the name, address, and license number of the bidder; the name of the project (Taxiway Alpha Emergency Patching) and the time and date due (2:00 p.m. local time, (**August 11, 2025**). Submitted Bids are to be addressed to the attention of

Birmingham, Airport Authority,
Mr. Ed Seoane., Vice President of Purchasing,
5900 Messer Airport Highway,
Birmingham, Alabama 35212.

The work consists of the reconstruction of the existing asphalt pavement on Taxiway A at the Birmingham-Shuttlesworth International Airport.

Total Contract Time for completion of the work is 7 days.

Liquidated damages for delays will be in the amount of \$2,000.00 per calendar day that the project remains incomplete after a specified completion time and \$1,000.00 for each calendar day elapsing between substantial completion and completion of the final punch list.

A pre-bid conference will be held on, (**July 28 , 2025**), starting at 2:00 p.m. local time at Meeting Room B located at Birmingham-Shuttlesworth International Airport, 5900 Messer Airport Highway, Birmingham, Alabama 35212. All perspective bidders are strongly encouraged to attend this conference. **The Pre-Bid Conference will be the prospective bidders' only opportunity to view the project site prior to the bid opening.**

The deadline for submitting questions is (**August 1, 2025**).

Plans and Specifications will be available for review beginning on (**July 21, 2025**) , at the following location:

SARCOR, LLC
215 19th Street N
Suite 101
Birmingham, AL 35203

To obtain Bid Documents, Electronic or printed copies, interested parties must contact SARCOR via both email and phone to make necessary arrangements. Please reach out to SARCOR by calling **205.706.8170** and sending an email to jeff@sarcorllc.com.

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Partial sets of Bidding Documents will not be available directly from the Issuing Office. Neither the Owner nor the Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda, if obtained from sources other than the.

No Bid may be withdrawn by the BIDDER within one-hundred and twenty (120) days after actual date of opening thereof.

Each Bidder is individually responsible for the careful examination of the site of the proposed Work, the Proposal, Plans, General Provisions, Technical and Supplemental Specifications, Contract Forms and all requirements of the project. The failure or omission by any Bidder to do so shall in no way relieve any Bidder from any obligation with respect to its bid.

All bidders bidding in amounts exceeding \$50,000.00 must be licensed under the provisions of Title 34, Chapter 8, Code of Alabama, 1975, as amended.

Each bid shall be accompanied by a Bid Bond, submitted in the form of a guaranty and/or promissory note from a banking, insurance or other lending or financial institutions, equal to five (5%) per cent of the bid price and made payable to the Birmingham Airport Authority. No cash, check, or money orders will be accepted. All bidding participants will be required to adhere to the following provisions listed below:

1. Buy America Preferences
2. Foreign Trade Restriction
3. Davis Bacon
4. Affirmative Action
5. Governmentwide Debarment and Suspension
6. Governmentwide Requirements for Drug-Free Workplace

Title VI Solicitation Notice: The Birmingham Airport Authority (Authority), in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 USC §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders or offerors that it will affirmatively ensure that for 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 no businesses will be discriminated against on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability in consideration for an award.

DBE Policy: It is the policy of the Birmingham Airport Authority (Authority) that DBEs as defined in 49 CFR Part 26 will have maximum opportunity to participate in the performance of all Authority projects and the Proposer will take all necessary and reasonable steps to ensure that DBEs have the maximum opportunity to compete for and perform subcontracts. Additional DBE information is contained in the full Invitation to Bid package. The bidder shall make good faith efforts, as defined in Appendix A to 26.45 – Guidance Concerning Good Faith Efforts-49 CFR Part 26, Regulations of the Office of the Secretary of Transportation, to subcontract 1% of the dollar value of the prime contract to small business concerns (SBE) owned and 18% to that controlled by socially and economically disadvantaged individuals (DBE).

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 responsiveness, the Bidder or Offeror must submit the following information with its proposal on the forms provided herein:

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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. Written confirmation from each listed DBE firm that it is participating in the contract in the kind and amount of work provided in the prime contractor's commitment; and
6. 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 documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

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

Timetables

Goals for minority participation for each trade: **32.0%**

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

These goals are applicable to all of the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction. The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a) and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours per-formed.

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 sub-contractor; 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. 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.

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is **Alabama, Jefferson County, City of Birmingham.**

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

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

TRADE RESTRICTION CERTIFICATION

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

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

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

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

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

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

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

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

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

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

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.

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DOCUMENT 00 02 30

GOVERNMENTWIDE DEBARMENT

CERTIFICATION OF OFFEROR/BIDDER REGARDING DEBARMENT

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

CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT

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

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

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

END OF DOCUMENT 00 02 30

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DOCUMENT 00 03 00

INSTRUCTIONS TO BIDDERS

1. DEFINITIONS:

The definitions of certain terms used in these Contract Documents are given in Section 000100 hereof.

2. RECEIPT AND OPENING OF BIDS:

Bids will be received, opened, and read at the time and place specified in the Invitation for Bids. Bidders or their authorized agents are invited to be present. Bids received after the time and date specified will not be considered and will be returned unopened.

3. PLANS AND OTHER CONTRACT DOCUMENTS:

The Plans, Specifications and other Contract Documents give the location and description of the Work to be performed under this Contract, the quantity of Work for which Bids are invited, the time in which the Work must be completed, the amount of the Bid Guaranty, and the date, time and place of the receipt and opening of Bids.

4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE:

The Bidder is required to carefully examine the site of the Work and the Plans, Specifications and other Contract Documents for the Work contemplated. By submitting a Bid, the Bidder represents to the Owner that it has investigated and is fully informed of the conditions to be encountered, of the character, quality, and quantities of Work to be performed and materials to be furnished and of all of the requirements of the Plans, Specifications and other Contract Documents.

5. OBLIGATION OF BIDDERS:

The Bidder must inform itself fully of the construction and labor conditions under which the Work is to be performed. The Bidder shall not be relieved of its obligation to furnish all material, equipment, labor, and services necessary to carry out the provisions of the Contract Documents and to complete the contemplated Work for the consideration set forth in its Bid by reason of having failed to inform itself with respect to those matters.

6. ADDENDA - CHANGES WHILE BIDDING:

- No interpretation of the Plans, Specifications or other Contract Documents or correction of any apparent ambiguity, inconsistency, or error therein, will be made to any individual Bidder. Every request for an interpretation or correction **MUST** be in writing, addressed to SARCOR, LLC, 215 19th Street N, Suite 101, Birmingham, AL 35203 or email jeff@sarcorllc.com & selena@sarcorllc.com and must be received at least seven (7) Calendar Days prior to the date fixed for the opening of Bids.

Phone calls will not be received, nor returned.

- Every interpretation made to a Bidder will be in the form of an Addendum to the contract Documents, and when issued, will be sent to registered plan holders not later than four (4) Calendar Days prior to the date

space provided on the Bid Form, its Bid will nevertheless be construed as though the Addendum had been received and acknowledged, and the submission of its Bid will constitute acknowledgment of the receipt of the same.

- Only the interpretation or correction issued by the Engineer in a written Addendum shall be binding, and prospective Bidders are warned that no other source or form of communication is authorized to give information concerning, or to explain or interpret, the Contract Documents.
- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

7. PREPARATION OF BIDS:

Bids shall be submitted on a reproduced copy of the attached Bid Form and shall include the required Bid Guaranty, Equal Opportunity Report Statement, Certification of Non-Segregated Facilities, Firm Profile and information concerning DBE participation in the Contract. Do not remove the attached Bid Form from this copy of the Contract Documents. All blank spaces in the Bid Form shall be completed legibly and correctly in ink. The Bidder shall specify the Total Bid Price for the entire Work described in the Contract Documents. See Sections 00 05 00, 00 05 10, 00 05 20, 00 05 30, 00 05 40, 00 05 60, 00 05 80 and 00 05 90.

If the Bid is made by an individual, it must be signed in the name of the individual and state the individual's post office address and the name and address of every other person interested in the Bid as principal. If the Bid is made by a firm or partnership, its name and address must be stated, together with the name and address of each member of the firm or partnership. If the Bid is made by a Corporation, the Bid must be signed by an authorized officer or agent, on behalf of the Corporation and the corporate seal must be affixed thereto. The officer or agent must also provide the state in which the Corporation is incorporated, the names and business addresses of the President, Secretary and Treasurer, evidence that the Corporation is in good standing in its state of incorporation and in Alabama, and evidence that the Corporation has registered with the Secretary of State of the State of Alabama as a foreign corporation for doing business in the State of Alabama.

8. BID GUARANTY:

Each Bid shall be accompanied by a Bid Bond (Section 00 06 00), submitted in the form of a guaranty in the form contained in the Contract Documents, duly executed by the Bidder as Principal having as Surety thereon a Surety company fulfilling the qualifications described in Subsection 17.0 of this Section 00030.

The Bid Guaranty shall be written through a licensed Alabama agency on behalf of a Surety company licensed to do business in the State of Alabama.

The Bid Guaranty shall be in an amount equal to five percent (5%) of the amount of the Total Bid Price payable to the Birmingham Airport Authority. The Bid Guaranty shall be submitted with the understanding that it shall guarantee that the Bidder will submit a responsive Bid, that it will not withdraw the Bid for a period of One-hundred and Eighty (180) Days after the time and date fixed for the opening of Bids, that if the Bidder is provided with a Notice of Intent to Award the Contract, the Bidder will enter into a formal Contract with the Owner in the form contained in the Contract Documents, that the Bidder will supply evidence of the authority of the person executing the Contract Documents and bonds to do so, that the required Contract Bonds, Certificates of Insurance, Equal Opportunity and Disadvantaged Business Enterprise data, certifications and submissions will be given and that all other Contract Documents will be executed in the form provided therein. If any of the foregoing requirements are not met, the Owner shall be entitled to the full amount of the Bid Guaranty as damages to the Owner resulting from the Bidder's failure to meet those requirements.

Bid Bonds will be returned to all except the three (3) apparent low, qualified, responsible, responsive Bidders within ten (10) Days after the awarding of Bid, and the remaining Bid Guaranties will be returned within three (3) Days after the Owner and the successful Bidder have executed the Contract Documents required by the Owner for the Work. **No cash, checks, cashier's checks or money orders will be accepted and will constitute a non-responsive bid which will be returned to the Bidder without consideration.**

9. **DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS:**

It is the policy of the Authority that DBEs as defined in 49 CFR Part 26 will have maximum opportunity to participate in the performance of all Authority projects and the Bidder will take all necessary and reasonable steps to ensure that DBEs have the maximum opportunity to compete for and perform subcontracts. Bidders will demonstrate that they will subcontract with certified

DBEs, or clearly demonstrate in a manner acceptable to the Authority its good faith efforts to obtain DBE subcontractors. The successful bidder's DBE commitment as stated on their Letter(s) of Intent will be incorporated into the contract and will be enforceable under the terms of the contract.

Bidders are encouraged to refer to the Authority's DBE Program and Policy which is posted on the Authority's website: www.flybirmingham.com. Bidders should refer to the directory of DBE companies certified by the Birmingham Airport Authority's DBE Program. Additional assistance may be obtained by calling the Authority's DBE Liaison Compliance Officer at 205-599-0522.

The bidder shall make good faith efforts, as defined in Appendix A to 26.45 - Guidance Concerning Good Faith Efforts - 49 CFR Part 26, Regulations of the Office of the Secretary of Transportation, to subcontract **1%** of the dollar value of the prime contract to small business concerns (SBE) and **18%** of the dollar value of the prime contract to economically disadvantaged individuals (DBE). In the event that the bidder for this solicitation qualifies as a DBE, the contract goal shall be deemed to have been met. Individuals who are rebuttably presumed to be socially and economically disadvantaged include Women, Blacks, Hispanics, Native Americans, Asian-Pacific Americans, and Asian-Indian Americans. The Prime Contractor and Subcontractor are required to submit, with the bid, a firm profile. In addition, the Prime Contractor will submit required forms outlined in Division I, Section 00 05 40 – 00 05 60, containing information about the DBE's that will participate in this contract. The information will include the name and address of each DBE, a description of the work performed by each named firm and the dollar value of the contract. If the bidder fails to achieve the contract goal stated herein, it will be required to provide

(with the bid) documentation demonstrating that it made good faith efforts in attempting to do so. A bid that fails to meet these requirements will be considered non-responsive.

The contractor shall provide written notification to the Director to the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000.00 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, estimated dollar amount of the subcontract, estimated starting and completion dates of the subcontract, and the geographical area in which the contract is to be performed.

10. DESCRIPTION OF WORK:

The Work identified in the Advertisement for Bids consists of Work to be performed by a qualified Contractor
for:

Taxiway Alpha Emergency Patching

The above general outline features of the Work do not in any way limit the responsibility of the Contractor to perform all Work and furnish equipment, materials, and labor required by the Plans, Specifications and Contract Documents referred to herein.

11. DELIVERY OF BIDS:

All Bids shall be submitted in sealed envelopes bearing on the outside the name of the Bidder, the Bidder's address, the Bidder's license number, the name of the Project for which the Bid is submitted, and the time and date fixed for the opening of Bids. The Bid Guaranty specified Non-Segregated Facilities and information concerning DBE participation, shall be enclosed in the sealed envelope with the Bid. Hand delivery of bids is highly encouraged; however, all mailed bids shall be mailed by registered mail. If forwarded by mail, it shall be enclosed in another envelope addressed to

Birmingham, Airport Authority,
Mr. Ed Soane., Vice President of Purchasing,
5900 Messer Airport Highway,
Birmingham, Alabama 35212.

Bids received after the time and date specified in the Advertisement for Bids will not be considered and will be returned unopened.

12. WITHDRAWAL OF BIDS:

No Bid may be withdrawn for a period of One-Hundred and Eighty (120) Days after the time and date fixed for the opening of Bids after it is submitted, unless the Bidder can present clear and convincing documentary evidence of a Bid mistake. The Bidder must make its request in writing and such request must be received prior to the time and date fixed for the receipt of Bids. Should its Bid be withdrawn, the Bidder shall be excluded from any participation in the Project or Bidding on the same Project if it is re-advertised.

13. DISQUALIFICATION OF BIDDERS:

In Subsection 8.0 hereof, as well as the Equal Opportunity Report Statement, Certification of any of the following causes may be considered sufficient for the disqualification of a Bidder and the rejection of its Bid:

- 13.1** Submission of more than one Bid for the same Work by an individual, firm, partnership or corporation under the same or different names;
- 13.2** Evidence of collusion between or among Bidders;
- 13.3** Work for which the Bidder is committed by Contract, which, in the Owner's judgment and sole discretion, might hinder or prevent the prompt completion of the Work under this Contract if awarded to the Bidder;
- 13.4** Being behind on the approved completion schedule for any existing Contracts with the Owner, in litigation with the Owner or having defaulted on a previous Contract with the Owner;
- 13.5** Poor, negligent or defective performance of Work for Owner or any other party on prior Projects, which, in the Owner's judgment and sole discretion, raises doubts as to the Bidder's ability to properly perform the Work;
- 13.6** Appearance of the Bidder on the Department of General Services' Convicted Vendors List; and
- 13.7** Any other cause which, in the Owner's judgment and sole discretion, is sufficient to justify disqualification of a Bidder or the rejection of its Bid.

14. REJECTIONS OF IRREGULAR BIDS:

Bids will be considered irregular and may be rejected if they show omissions, alterations of form, additions not called for, conditions, limitations, unauthorized alternate Bids or other irregularities of any kind.

The Owner shall have the right to waive any informalities or irregularities of Bids or to reject any or all Bids.

15. BASIS OF AWARD:

The basis of award will be the lowest cost summation of pay items in the Base Bid. In determining the apparent low Bid, the Owner reserves the right to correct, in all Bids, obvious mathematical errors within the Total Bid Price, page totals or any combination thereof, and acknowledgement of DBE subcontractors. The successful bidder's DBE commitment as stated on their Letter(s) of intent will be incorporated into the Contract and will be enforceable under the terms of the Contract.

Bidders are encouraged to refer to the Authority's DBE Program and Policy which posted on the Authority's website: www.flybirmingham.com. Bidders should refer to the directory of DBE companies certified by the Birmingham Airport Authority's DBE Program. Additional assistance may be obtained by calling the Authority's DBE Liaison Compliance Officer at 205-599-0522. The bidder shall make a good faith effort, as defined in Appendix A to 26.45 – Guidance Concerning Good Faith Efforts – 49 CFR Part 26, Regulations of the Office.

16. NOTICE OF INTENT TO AWARD CONTRACT:

Unless all Bids are rejected, a Notice of Intent to Award the Contract will be issued to the qualified, responsible Bidder whose Bid is responsive to the Invitation to Bid and is most advantageous to the Owner, price and other factors considered. The Owner reserves the right to take into consideration the Bidder's past performance with the Owner or any other entity in determining if the Bidder and its Bid are responsible, qualified, and most advantageous to the Owner.

17. GUARANTY OF FAITHFUL PERFORMANCE AND PAYMENT:

A Performance Bond and a Payment Bond satisfactory to the Owner and in the form attached as Sections 00 08 10, and 00 08 30 hereto, each in an initial amount of not less than the Total Contract Price, will be required of the successful Bidder for, among other, the following purposes:

- 17.1** To guarantee faithful performance of the requirements of the Contract Documents, including all applicable warranties.
- 17.2** To guarantee the payment for all labor, materials, or supplies used directly or indirectly in the prosecution of the Work provided for in the Contract.

The penal sum of the Performance Bond and the Payment Bond shall be increased or decreased during the course of the Work in the event that modifications, Change Orders or Addenda increase or decrease the Total Contract Price so that the penal sum of each bond shall be in an amount equal to the completed Contract Price at the completion of the Work.

The Bonds shall be exactly in the forms contained in the Contract Documents, and written through a licensed Alabama agency on behalf of a Surety company licensed to do business in the State of Alabama, meeting the following requirements:

- a. Qualification - Management and Strength:** The Surety must be rated no less than "A" as to management and no less than "XII" as to strength, by the latest edition of Best's Insurance Guide, published by A.M. Best Company, Post Office Box 1107, Summit, New Jersey 07901.
- b. Bonding Limit - Any One Risk:** The bonding limit of the Surety shall not exceed five percent (5%) of the policyholder surplus (capital and surplus) as listed by the aforementioned Best's Insurance Guide.
- c. Qualification Federal Project Approval:** The Surety's company executing the Bonds shall be on the current list of the U.S. Treasury Department as being approved by and writing bonds for the Federal Projects in the amount not less than the penal sum of the Bonds provided by the Owner.

The completed Bonds shall be delivered to the Owner with the executed Contract as required hereinafter in these Instructions to Bidders.

Provisions for Liquidated Damages are provided in the Bid Form and Contract Documents.

18. INSURANCE REQUIREMENTS:

Attention of Bidders is called to all applicable Alabama code which has certain requirements pertaining to Performance Bonds, labor bonds, employer's liability insurance, public liability insurance, workmen's compensation insurance, and property damage insurance.

All companies furnishing Bid Bonds and Performance Bonds shall furnish evidence of being on the U.S. Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the State of Alabama.

19. POWER OF ATTORNEY AND COUNTERSIGNATURE:

Attorneys-in-fact who sign Bid Guaranties, Performance Bonds and Payment Bonds, must file with such Bonds a certified copy of their power-of-attorney to sign the bonds. All bonds must be countersigned by a resident Alabama agent of the Surety, with proof of agency attached.

20. EXECUTION OF CONTRACT:

The Bidder who receives a Notice of Intent to Award the Contract shall, within ten (10) Calendar Days after the date of Notice of Intent to Award, execute and deliver to the Owner the Contract Agreement, the completed Bonds listed above, satisfactory evidence of compliance with the Bid conditions pertaining to the Disadvantage Business Enterprise Program, satisfactory evidence of all required insurance coverage, proof satisfactory to the Owner of the authority of the person or persons executing the Contract Agreement and the Performance Bond and the Payment Bond on behalf of the Bidder and evidence of obtaining licenses and permits needed to perform. The above documents must be furnished, executed and delivered before the Contract Documents will be executed by the Owner. The Contract shall not be deemed awarded and shall not be binding upon the Owner until it has been approved and executed by the Owner and approved by the TSA, and a copy of the fully executed Contract Documents is delivered to the Contractor. Further, award of this Contract is contingent upon Owner's receipt of grant funding from State agencies or the TSA, if applicable. The Owner shall have the right to rescind its Notice of Intent to Award without liability, except for the return of the Bid Guaranty to the Bidder, at any time before the Contract Documents have been fully executed by all parties and delivered to the Contractor.

21. FAILURE TO EXECUTE CONTRACT - BID GUARANTY FORFEITED:

If the Bidder receiving a Notice of Intent to Award the Contract fails to execute and deliver to the Owner the Contract Agreement, the completed Payment Bonds and Performance Bonds listed in Subsection 17.0 hereof, the required evidences of insurance coverage, compliance with Bid conditions pertaining to the DBE Program and the evidence of authority to execute required in Subsection 7.0 hereof, and evidence of obtaining licenses and permits needed to perform, within ten (10) Calendar Days after the date of the Notice of Intent to Award, the Owner may elect to rescind the Notice of Intent to Award and shall be entitled to the full amount of the Bid Guaranty, not as a penalty, but in liquidation of and compensation for damages sustained. A Notice of Intent to Award may then be provided to the next most, qualified, responsible Bidder whose Bid is responsive to the Invitation to Bid and is most advantageous to the Owner, price and other factors considered. In addition, the Owner reserves the right to reject all Bids at any time prior to full execution of Contract and delivery to the Contractor.

22. NOTICE AND SERVICE THEREOF:

All notices given by the Owner, OAR or the Engineer, under the provisions of the Contract Documents, shall be in writing and service of same may be by either of the following methods:

- 22.1 By delivery of the notice to the Bidder or to any officer of the Bidder if Bidder is a corporation, or to any agent of the Bidder.
- 22.2 By mailing the notice by United States mail to the address of the Bidder shown on the Bid.

Notices given by the Owner or Engineer shall be effective upon mailing, if mailed.

23. TAXES:

The Contractor shall, at its own expense, pay all applicable sales, consumer, use, and similar taxes related to the Work or any portion thereof provided by the Contractor and for which the Contractor is liable.

24. TIME OF COMPLETION:

The time of completion is of the essence of this Contract and, each Bidder, if delivered an executed Contract, shall proceed with the Work in accordance with the approved schedule and within the Contract Time specified in the Contract Documents. In the event of failure to complete the Work within the time specified, the Owner may assess damages as provided by law or the Contract Documents, including Liquidated Damages, unless an appropriate extension of time has been granted.

The time of completion or Contract Time for this Contract shall be **7 calendar days** from the Contractor's Notice to Proceed with construction for the Work, inclusive of the Schedules, and Base Bid/Add Alternates as awarded.

Work stoppages will be scheduled and coordinated to accommodate the client's operational needs or during extended periods of unsuitable weather.

25. MINIMUM WAGE RATES:

For Federally assisted construction Contracts, minimum wage rates for the construction of the proposed Work have been established by the U.S. Department of Labor, and schedules of labor classification and corresponding prevailing wage rates are included in Section 00250, Wage and Labor Requirements of these Contract Documents. In preparing a Bid, the Bidder shall make an appropriate allowance so that its wage rates will meet the minimum rates required for the Work. The Bidder shall not be relieved of its obligations under the Contract Documents by reason of having failed to make adequate provision for minimum required wage rates.

26. COMPUTATION OF TIME:

In computing the time in which Bidders, Owner or the Engineer have to submit documents or respond to inquiries during the Pre-Construction phase of this Project, intermediate Saturdays and Sundays will be included in determining the permissible number of Days. If the final date for delivery of documents or responses to inquiries falls on a Saturday, Sunday or legal holiday when the Owner's offices are closed, the applicable deadline shall be extended until the next Day that is neither a Saturday, Sunday or legal holiday.

27. ALLOWANCES:

- 27.1 Contractor shall include in the Total Contract Price all allowances (if applicable) stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities against which the Contractor makes reasonable objection.

27.2 Unless otherwise provided in the Contract Documents:

- 27.1.1** Materials and equipment under an allowance shall be selected by the Owner within the time frames required by the Baseline Schedule;
- 27.1.2** Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- 27.1.3** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Total Contract Price and not in the allowances;
- 27.1.4** Whenever costs are more than or less than allowances, the Total Contract Price shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual costs and the allowances supported by appropriate substantiating data, such as quotations and time sheets that demonstrate the actual cost.

28. LIQUIDATED DAMAGES:

The Authority may, in accordance with contract specifications, assess "Liquidated Damages" against the Contractor for failure to complete the project with the agreed time of completion set forth in the original executed agreement or any subsequent amendments thereto. **The liquidated damage amount shall be \$2,000.00 per calendar day until substantial completion is accomplished, and \$1,000.00 for each calendar day elapsing between substantial completion and completion of the final punch list for the project.**

Any costs or expenses incurred by the Authority as a direct result of the delayed completion, such as consulting fees and administrative expenses, shall be recovered by the Authority in addition to the total liquidated damages amount set forth above.

The Authority's Program Manager or Designated Representative shall determine when the Contractor has achieved substantial completion of the project in accordance with the terms and conditions of the contract. All requests for extensions will be presented in writing to the Project Manager. All requests shall be considered and responded to within seven (7) calendar days of the date the request was received by the Project Manager. All responses shall be in writing.

29. EQUAL OPPORTUNITY REPORT STATEMENT:

Each Bidder shall complete, sign and submit together with its Bid, the Equal Opportunity Report Statement in Section 00 05 20 following the Bid Form. A Bid may be considered unresponsive and may be rejected, in the Owners sole discretion, if the Bidder fails to provide the fully executed Statement, or fails to furnish the required data.

30. CERTIFICATION OF NON-SEGREGATED FACILITIES:

Each Bidder shall complete, sign, and submit together with its Bid, the Certification of Non- Segregated Facilities in Section 00 05 30 following the Bid Form. A Bid may be considered unresponsive and may be rejected, in the Owners sole discretion, if the Bidder fails to provide the fully executed Statement, or fails to furnish the required data.

31. DISADVANTAGE BUSINESS ENTERPRISE DATA:

Each Bidder shall complete, sign, and submit together with its Bid, the DBE Letter of Intent form concerning DBE participation in the Contract in Section 00 27 00. A Bid may be considered unresponsive and may be rejected, in the Owners sole discretion, if the Bidder fails to provide the fully executed Statement or fails to furnish the required data. The apparent low, qualified, responsible, responsive Bidder who receives a Notice of Intent to Award the Contract shall, within ten (10) Calendar Days after the date of Intent to Award, submit all additional information required by the Owner's Disadvantaged Business Participation Policy to the Owner. This Policy is described in part in Section 00 27 00 of the Contract. It is to serve as a guide to the Bidder and the Owner in award of this Contract. The Bidder, in meeting the guidelines of the Disadvantaged Business Participation Policy, is not relieved of its Equal Employment Opportunity obligations under state and federal laws and regulations.

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.

32. 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.

33. RECORD DOCUMENTS:

The Contractor shall keep one record copy of the Contract Documents, CBMPP, shop drawings and Plans and samples at the site, in good order and annotated daily to show all changes made during the construction process. **These shall be available to the Engineer for examination and shall be delivered to the Vice President of Planning and Development, BAA upon completion of the Work.** Failure to maintain Record Documents current may be cause to withhold partial payment

34. FEDERAL LAWS:

Contemplated construction shall be governed at all times by applicable provisions of federal laws, including but not limited to the latest amendments of:

34.1 Equal Employment Opportunity Requirements

Equal Employment Opportunity and Wage and Labor Provisions are specified in Section 00 25 00 of this Contract. Each Bidder shall complete, sign and include in its Bid the Equal Opportunity Report Statement (Section 000520) and Certification of Non-Segregated Facilities (Section 000530).

When a determination has been made to award the Contract to a specific Contractor as the apparent low, qualified responsible, responsive Bidder, such Contractor shall furnish pertinent information regarding its own employment policies and practices as well as those of its proposed Subcontractors as the TSA, the Owner, or the Secretary of Labor may require, prior to execution of the Contract. All such information required of a Subcontractor shall be furnished by the Contractor.

The Equal Opportunity Report Statement, Certification of Non-Segregated Facilities, equal opportunity clause, all other EEO requirements, and all applicable Wage and Labor Provisions shall be included in all non-exempt Subcontracts entered into by the Contractor. No Subcontract shall be awarded to a new non-complying Subcontractor.

In addition, the Contractor will also insert in each of its Subcontracts, a clause requiring the Subcontractor to include these provisions in any lower tier Subcontract, which it may enter into, together with a clause requiring this insertion in any further Subcontracts that may in turn be made.

The Contractor or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of the Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of this Project. Failure by the Contractor or any Subcontractor 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.

34.2 Disadvantaged Business Participation

Disadvantaged Business Enterprise provisions shall be followed according to Section 00270 of the Contract.

As a prerequisite to the Owner receiving TSA's concurrence in award, and upon determination by the Owner to award the Contract to a specific Contractor as the apparent low, qualified, responsible, responsive Bidder, such Contractor shall furnish any additional information or reconfirm previously submitted information concerning the assurances outlined in Section 000540 and 00270 as the TSA or the Owner may require.

34.3 Fair Labor Requirements

Labor requirements are provided in Section 000250 and Section 000260 of this Contract. Minimum wage rates for the construction of the proposed Work have been established by the Secretary of Labor, U.S. Department of Labor. Schedules of Labor Classifications and corresponding Prevailing Wage Rates are included in Section 000250 of this Contract.

34.4 Occupational, Safety and Health Requirements

The Occupational, Safety and Health requirements as described or defined in the following Act, Regulation, or Advisory Circular shall apply to the execution of this construction Contract:

Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 91-596. Title 29, Code of Federal Regulations: Chapter 17, Occupational Safety and Health Administration; Part 1910, Occupational, Safety and Health Standards; and Part 1926, Safety and Health Regulations for Construction.

FAA AC 150/5370-2F (9/29/11), Operational Safety on Airports During Construction.

35. ADDITIONAL INSTRUCTIONS FOR APPARENT LOW, QUALIFIED, RESPONSIVE BIDDER:

Contractor assistance is essential to execute a Contract with the Owner and to prepare for a Contractor's Notice-To-Proceed.

Contractor is instructed to carefully examine the Contract Documents and to understand what is expected during each phase of the Projects construction. The Owner will maintain the original Bid Form and Bid Bond on file for record purposes. The Contractor will be furnished six (6) copies of the Contract Documents by the Owner. The Contractor shall complete, execute and submit all required documentation within ten (10) Calendar Days after the Notice of Intent to Award the Contract to the Owner. Specific items that must be completed and executed are:

Bid Items - The Contractor shall confirm with the Owner the Bid Items to be awarded in the final Contract to confirm Total Contract Price.

Contract Payment, Performance and Guaranty Bonds - Complete in the amount of Total Contract Price, effective upon Owner execution of Contract.

Evidence of Required Insurance Coverage and Authority to Execute - Complete.

Disadvantaged Business Enterprise Program, Section 00 05 40 - Complete.

Upon Owners notification of concurrence in Contract award, the following items must be completed prior to issuance of a Notice to Proceed

Owner: Execute Contract Documents and forward copy to Contractor.

Contractor: Prepare detailed procurement and construction schedule for immediate submittal to the Owner and Engineer. Confirm all Subcontractor names and material Suppliers. Schedule shall be submitted to the Owner and Engineer for review at least five (5) Working Days (weekends excluded) prior to the scheduled date of the Pre- Construction Conference.

END OF SECTION 00 03 00

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BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

DOCUMENT 00 04 00

PROJECT DIRECTORY

OWNER:

Birmingham Airport Authority
Mr. Marcelo Lima,
Vice President of Planning & Development
5900 Messer Airport Highway
Birmingham, AL 35212
Phone: (205) 599-0703
Fax: (205) 599-0770

Mr. Ocean Boyd,
Planning and Development Manager
Phone: (205) 599-0562

Dr. Schavass Hamilton
Construction Manager
Phone: (205) 599-0776

ENGINEER OF RECORD:

SARCOR, LLC
Jeffrey Havercroft, P.E
215 19TH Street N
Birmingham, AL 35203
Phone: (205) 706-8170

END OF SECTION 00 04 00

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DOCUMENT 00 05 00

BID FORM

1.0 Bid

Submitted By: _____

Date: _____

TO:

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 herein mentioned has any interest in this 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.

The Bidder further represents that it has examined the site of the Work and informed itself fully in regard to all conditions pertaining to the place where the Work is to be done; that it has examined the Plans and Specifications for the Work and other Contract Documents relative thereto and has read all of the Addenda furnished prior to the opening of the Bids, as acknowledged below; and that it has otherwise fully informed itself regarding the nature, extent, scope and details of the Work to be performed.

If provided with a Notice of Intent to Award the Contract by the Owner, the Bidder shall Contract with the Owner in the form of Contract Agreement contained in the Contract Documents, furnish all necessary permits, licenses, materials, equipment, machinery, maintenance, tools, apparatus, means of transportation and labor necessary to complete the Work provided for in the Contract Documents for "**Taxiway Alpha Emergency Patching**" Birmingham, Alabama, furnish the Performance Bond and Payment Bond in the form contained in the Contract Documents each for not less than the Total Contract Price, furnish the required evidence of the specified insurance coverages, furnish the required Disadvantage Business Enterprise data and submittals, and furnish the proof of authority to execute required by the Instructions to Bidders. The Bidder shall commence Work specified herein within the time limits set forth in the Contract Documents, which time limits the Bidder acknowledges are reasonable.

If the Bidder fails or refuses to execute the Contract Documents or furnish the required Bonds and other required documents as set forth in the Instructions to Bidders within ten (10) Days calendar days after the date of the Notice of Intent to Award the Contract to it, the Bid Guaranty accompanying this Bid, and the money payable thereon shall become the property of the Owner. Otherwise, the Bid Guaranty will be returned to the Bidder.

If the Bidder fails to complete the Work within the scheduled time or any authorized extension thereof, damages, including Liquidation Damages in accordance with the terms of the Contract Documents shall be deducted from the Total Contract Price payable to Contractor.

Acknowledgment is hereby made of the following Addenda (identified by number) received since issuance of the Contract Documents, Plans and Specifications:

ADDENDUM No.	Date	Addendum No.	Date
_____	_____	_____	_____
_____	_____	_____	_____

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

BASE BID – Taxiway Alpha Emergency Patching

ITEM	DESCRIPTION	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL COST
1	Install construction site safety measures	1	LS		
2	Remove construction site safety measures	1	LS		
3	Establishing site access and material staging areas	1	LS		
4	Removal of existing pavement	2,772	SY		
5	Placement of binder asphalt layer 5" thick	830.2	TON		
6	Placement of surface wearing layer 3" thick	498.3	TON		
7	Pavement Marking Incl. Preservation of Centerline	1	LS		
TOTAL					

TOTAL _____

TOTAL BASE BID AMOUNT= _____ AND ____/100 DOLLARS

BID

For all Work required in accordance with the applicable Plans, Specifications and other Contract Documents including the cost of the required Performance Bond and Payment Bond and Insurance, the undersigned submits:

TOTAL BID PRICE: _____

DOLLARS (\$ _____).

Attached is a Bid Guaranty on the standard form of the Owner for the sum of

_____ DOLLARS (\$ _____) according to the requirements of the Instructions to Bidders, which Bid Bond is subject to the conditions and provisions thereof.

(If Bidder is an individual, sign on this line.)

_____ (Seal)

_____ (Seal)

(If Bidder is partnership or limited liability company, fill in name of partnership or limited liability company, followed by the signature of the partner, member or manager signing on behalf of the partnership or limited liability company.)

A Partnership/Limited Liability Company

By: _____ (Seal) Name:

Its: _____

Name and address of all partners or members:

(If Bidder is a corporation, fill in the name of the corporation, followed by the signature of the officer signing on behalf of the corporation, followed by the officer's title.)

The below Corporation is organized and existing under the laws of the State of _____, authorized by law to make this Bid and perform all Work and furnish materials and equipment required under the Contract Documents, and is authorized to do business in the State of Alabama.

A Corporation

Attest: _____

Secretary

Name: _____

Title: _____

By: _____ (Seal)

(Affix Corporate Seal)

(Address)

The full names and home addresses of persons or firms interested in the foregoing Bid as Principals or Officers (specifically include the President, Secretary, and Treasurer and state the corporate office held by all other individuals listed) are as follows:

END OF SECTION 00 05 00

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DOCUMENT 00 05 10

NON-COLLUSION AFFIDAVIT

Bidder : _____

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

(This form must not be detached from the Contract Document)

State of: _____

County of: _____

_____, being first duly sworn, deposes and says:

- (1) He is the _____ (*Office or Title*) of the Bidder that has submitted the Attached Bid;
- (2) Such Bid is genuine and is not a collusive or sham Bid;
- (3) Neither the said Bidder nor any of its officers, partners, Owners, agents, representatives, employees or parties in interest, including this affidavit, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or present to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or the refrain from Bidding in connection with such Contract, or has communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or any other Bidder, or to fix any overhead, profit or cost element of the Bid Price or the Bid Price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner or any person interested in the proposed Contract;
- (4) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, Owners, employees, or parties in interest, including this affidavit; and
- (5) The undersigned is duly authorized to give this Affidavit on behalf of the Bidder.

Corporate Seal (where appropriate).

Signature: _____

Name (print or type): _____

Title: _____

Date: _____

State of : _____

County of: _____

I, the undersigned, a Notary Public in and for said County in said State, do hereby certify that _____ (*Name*), whose name as _____ (*Title*) of _____ (*Bidder*), a _____ (*Corporation/Partnership/LLC*), is signed to the foregoing instrument and who is known to me, acknowledged before me on this date that being informed of the contents of said instrument, he,

as such officer and with full authority, executed the same voluntarily for and as the act of said
(*Corporation/Partnership/LLC*) on the Day the same bears date.

Given under my official hand and seal this the _____ Day of _____, 20_____

[NOTARIAL SEAL]

Notary Public_____

My commission expires:_____

END OF SECTION

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DOCUMENT 00 05 20

EQUAL OPPORTUNITY STATEMENT

Bidder: _____

EQUAL OPPORTUNITY REPORT STATEMENT

(Must be completed and submitted with the Bid)

Each Bidder shall complete and sign the Equal Opportunity Report Statement. A Bid may be considered unresponsive and may be rejected, in the Owner's sole discretion, if the Bidder fails to provide the fully executed Statement or fails to furnish required data. The Bidder shall also, prior to award, furnish such other pertinent information regarding its employment policies and practices as well as those of its proposed Subcontractors as TSA, the Owner or the Executive Vice President of the Presidents Committee may require.

The Bidder shall furnish similar Statements executed by each of its first-tier and second-tier Subcontractors and shall obtain similar compliance by such Subcontractors, before awarding Subcontracts. No Subcontract shall be awarded to any non-complying Subcontractor.

**Equal Opportunity Report Statement
as Required in 41 CFR 60-1.7(b)**

The Bidder shall complete the following statements by checking the appropriate blanks. 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 established 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 or more employees.

(Name of Bidder)

Dated: _____

By: _____

Name: _____

Title: _____

END OF SECTION

DOCUMENT 00 05 30

CERTIFICATION OF NON-SEGREGATED FACILITIES

Bidder: _____

CERTIFICATION OF NON-SEGREGATED FACILITIES

(Must be completed and submitted with the Bid)

- a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Employment Opportunity clause in this contract.
- b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.
- c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Employment Opportunity clause of this contract.

(Name of Bidder)

Dated: _____

By: _____

Name: _____

Title: _____

END OF SECTION

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DOCUMENT 00 05 40

DISADVANTAGED BUSINESS ENTERPRISE DATA

The Bidder will complete the following statement by checking the appropriate box (check one only). Failure to complete this statement may be grounds for rejection of Bid.

- ☐ The Bidder assures that it will meet the requirements of the DBE Provisions, Item 9.0 of Section 00030 - INSTRUCTIONS TO BIDDERS and the Birmingham Airport Authority's Policy and Program and will utilize not less than the prescribed goal of **18 % MBE & 1% SBE**. The DBE assurance stated above is the minimum prescribed goal, however, additional DBE participation is encouraged and the actual DBE contractual commitment will be the percentage of the dollar amounts of participation shown on the validated Letter(s) of Intent submitted by the Contractor. It is understood that the dollar amounts shown on the Letter(s) of Intent are estimates and that actual amounts paid to DBE subcontractors may vary depending on the final adjustments of the estimated quantities; however, the total DBE Commitment may only be modified by Change Order.
- ☐ The Bidder is unable to assure **MBE & SBE** participation of the prescribed Goal of **18% and 1%** respectively in this Contract but will provide for a minimum of _____ % participation. (If this box is checked, Bidder may fill in the percentage blanks and document on a separate attachment to this Assurance, Bidder's efforts in attempting to meet the Goal as instructed in Section 00056 – DISADVANTAGED BUSINESS UNAVAILABILITY CERTIFICATION, and the Birmingham Airport Authority's DBE Policy and Program.

On all contracts for which a Contract Goal has been established, the Authority will inform all competitors that they will be required to submit DBE participation information to the Authority as part of their Bid. All DBEs must be certified by the Authority at the time the bids are submitted. Failure of a Bidder to submit a Letter of Intent with the following DBE information stated below in their Bid may render the Bid nonresponsive:

1. The names and addresses of DBE firms that participate in the Contract;
2. A description of the Work each named DBE firm will perform; and
3. The dollar amount of participation by each named DBE firm.
4. Written documentation of the Bidder's commitment to use a DBE subcontractor whose participation it submits to meet the contract goal.
5. Written confirmation from the DBE subcontractor that it will be participating in the contract as provided in the Bid.
6. A copy of each named DBE's certification letter from the Authority

A SEPARATE LETTER OF INTENT MUST BE COMPLETED FOR EACH DBE FIRM.

Letter of Intent

Failure to complete this statement may be grounds for rejection of Bid.

Name of Prime Bidder's firm:

Address:

City:

Telephone: _____ FAX _____ E-mail

Prime Bidder's Contract Amount \$

Percentage of Contract Amount performed by Prime Bidder _____ %

Name of DBE firm:

Address:

City:

Telephone: _____ FAX _____ E-mail

Identity of DBE (e.g. Hispanic, American Indian, Black, Female, etc.)

Check the appropriate box if the DBE is a material supplier:

- ☐ Materials and supplies obtained from a DBE Manufacturer (counts as 100% towards goal)
- ☐ Materials or supplies obtained from a DBE regular dealer (counts as 60% towards goal)

Description of work to be performed by DBE firm:

Amount of Subcontract \$ _____

Subcontract Percent of Prime Bidder's Contract Amount _____ %

Commitment:

Prime Bidder is committed to utilizing the above-named DBE firm for the work described above.

By: Print Name: _____ Date: _____

(Signature of Authorized Representative) (Title) (Name of Prime Bidder Firm)

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: Print Name: _____ Date: _____

(Signature of Authorized Representative) (Title) (Name of Prime Bidder Firm)

If the Prime Bidder does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation will be null and void.

EACH CONTRACT THE AUTHORITY EXECUTES WITH THE CONTRACTOR (AND EACH SUBCONTRACT THE CONTRACTOR EXECUTES WITH A SUBCONTRACTOR) MUST INCLUDE THE FOLLOWING CLAUSE:

Contractor's DBE Assurance: The Contractor or Subcontractor will not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. 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 word "Contractor" as used in this Assurance will mean the same as "Bidder".

(Name of Bidder)

By: _____
(Signature*)

Title: _____

Date: _____

* Must be same signature on Bid Form.

END OF SECTION

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DOCUMENT 00 05 50

NON-DISADVANTAGED BUSINESS ENTERPRISE DATA

See following pages for BAA Forms to be completed with bid submission.



Bid Opportunity List

Please furnish the following subcontracting information for ALL bidders/quoters/proposers.
This information must also be included in your bid or proposal package.

Prime Contractor/Consultant: _____

Bid/Proposal/Task Number: _____

Bid/Proposal/Task Name: _____

49 CFR Part 26.11 requires the Birmingham Airport Authority to develop and maintain a Bidders List/Participant List. This list is intended to be a listing of all firms that are participating, or attempting to participate, on DOT-assisted contracts. The list must include all firms that bid on prime contracts, or bid or quote subcontracts and materials supplies on DOT- assisted projects, including DBEs and Non-DBEs. For consulting companies this list must include all subconsultants contacting you and expressing an interest in teaming with you on a specific DOT assisted project . Prime contractors and consultants must fill in the information below and should provide any additional information if needed .

Prime Contractor/Consultant

Firm Name _____

Address _____

State & Zip Code _____

Firm Status ☐ Non-DBE

Gender

☐ DBE ☐ ACDBE

☐ Female

☐ SBE ☐ MBE/WBE

☐ Male

Firm's Age _____

Annual Gross Receipts

☐ Less than \$1 million

☐ Between \$1 - \$3 million

☐ Between \$3 - \$6 million

☐ Between \$6 - \$10 million

☐ Greater than \$10 million

Ethnicity

☐ Asian Pacific American

☐ Black American

☐ Hispanic America

☐ Native America

☐ Subcontinental Asian America

☐ Other

Subcontracts/Consultant

Firm Name _____

Address _____

State & Zip Code _____

NACIS Code(s): _____

Work Performed on contract:

Firm's Age _____

Annual Gross Receipts

☐ Less than \$1 million

☐ Between \$1 - \$3 million

☐ Between \$3 - \$6 million

☐ Between \$6 - \$10 million

☐ Greater than \$10 million

Gender / Ethnicity

☐ Female

☐ Male

☐ Asian Pacific American

☐ Black American

☐ Hispanic America

☐ Native America

☐ Subcontinental Asian America

☐ Other

Firm Status ☐ Non-DBE

☐ DBE ☐ ACDBE

☐ SBE ☐ MBE/WBE

Subcontracts/Consultant

Firm Name _____

Address _____

State & Zip Code _____

NACIS Code(s): _____

Work Performed on contract:

Firm's Age _____

Annual Gross Receipts

☐ Less than \$1 million

☐ Between \$1 - \$3 million

☐ Between \$3 - \$6 million

☐ Between \$6 - \$10 million

☐ Greater than \$10 million

Gender / Ethnicity

☐ Female

☐ Male

☐ Asian Pacific American

☐ Black American

☐ Hispanic America

☐ Native America

☐ Subcontinental Asian America

☐ Other

Firm Status ☐ Non-DBE

☐ DBE ☐ ACDBE

☐ SBE ☐ MBE/WBE



Bid Opportunity List

Please furnish the following subcontracting information for ALL bidders/quoters/proposers.
This information must also be included in your bid or proposal package.

Prime Contractor/Consultant: _____

Bid/Proposal/Task Number: _____

Bid/Proposal/Task Name: _____

Subcontracts/Consultant

Firm Name _____

Address _____

State & Zip Code _____

NACIS Code(s): _____

Work Performed on contract:

Firm's Age _____

Annual Gross Receipts

- ☐ Less than \$1 million
☐ Between \$1 - \$3 million
☐ Between \$3 - \$6 million
☐ Between \$6 - \$10 million
☐ Greater than \$10 million

Firm Status ☐ Non-DBE

☐ DBE ☐ ACDBE

☐ SBE ☐ MBE/WBE

Gender / Ethnicity

☐ Female

☐ Male

☐ Asian Pacific American

☐ Black American

☐ Hispanic America

☐ Native America

☐ Subcontinental Asian America

☐ Other

Subcontracts/Consultant

Firm Name _____

Address _____

State & Zip Code _____

NACIS Code(s): _____

Work Performed on contract:

Firm's Age _____

Annual Gross Receipts

- ☐ Less than \$1 million
☐ Between \$1 - \$3 million
☐ Between \$3 - \$6 million
☐ Between \$6 - \$10 million
☐ Greater than \$10 million

Firm Status ☐ Non-DBE

☐ DBE ☐ ACDBE

☐ SBE ☐ MBE/WBE

Gender / Ethnicity

☐ Female

☐ Male

☐ Asian Pacific American

☐ Black American

☐ Hispanic America

☐ Native America

☐ Subcontinental Asian America

☐ Other

Subcontracts/Consultant

Firm Name _____

Address _____

State & Zip Code _____

NACIS Code(s): _____

Work Performed on contract:

Firm's Age _____

Annual Gross Receipts

- ☐ Less than \$1 million
☐ Between \$1 - \$3 million
☐ Between \$3 - \$6 million
☐ Between \$6 - \$10 million
☐ Greater than \$10 million

Firm Status ☐ Non-DBE

☐ DBE ☐ ACDBE

☐ SBE ☐ MBE/WBE

Gender / Ethnicity

☐ Female

☐ Male

☐ Asian Pacific American

☐ Black American

☐ Hispanic America

☐ Native America

☐ Subcontinental Asian America

☐ Other

END OF SECTION

DOCUMENT 00 05 60

DISADVANTAGED BUSINESS UNAVAILABILITY CERTIFICATION

See following pages for forms to be submitted with bid.



DISADVANTAGED BUSINESS ENTERPRISE (DBE) OFFICE
Birmingham Airport Authority

DOCUMENTATION OF GOOD FAITH EFFORTS FORM
(To be completed and submitted with the Schedule of Contract Participation)

DBE Good Faith Effort Documentation

The intent of this form is to document the good faith effort attempts made by the apparent low bidder in soliciting DBE firms to meet the DBE project goal. Please note that the project goal will not be waived, and the contractor must make efforts to achieve the goal throughout the life of the contract.
Every work type where there is a certified DBE, the apparent low bidder must submit the form as follows:

The prime contractor understands that a determination of good faith effort to meet the contract goal is contingent on both the information provided by the prime contractor in the attachment forms to this application and the other factors listed in **Appendix A, of Title 49 CFR Part 26,** Consistent with the requirements of Title 49 CFR Part 26, Appendix A, the prime contractor hereby submits documentation (attached to this form) of good faith efforts made and requests to be evaluated under these requirements. The prime contractor acknowledges that the determination of good faith effort is made by the Birmingham Airport Authority and the Disadvantaged Business Enterprise Liaison Officer (DBELO), in keeping with federal requirements.

Date Submitted: _____
State Project Number: _____
Contractor Name: _____
Address: _____
City: _____ State: _____ Zip Code: _____
Contact Person: _____ Telephone Number: _____
Email Address: _____

- ☐ Bidder/offeror has met the DBE contract goal. The bidder/offeror is committed to a minimum of ____ % DBE utilization on this contract.
- ☐ Bidder/offeror has not met the DBE contract goal. The bidder/offeror is committed to a minimum of ____% DBE utilization on this contract and has submitted documentation demonstrating good faith efforts.

I certify that the information contained in this good faith effort documentation form is true and correct to the best of my knowledge. I further understand that any willful falsification, fraudulent statement or misrepresentation will result in appropriate sanctions which may involve debarment and/or prosecution under applicable State and Federal laws.

Bidder/Authorized Representative Signature: _____

Title: _____

Date: _____

Birmingham Airport Authority

**LETTER OF INTENT BETWEEN BIDDER/OFFEROR AND DISADVANTAGED BUSINESS ENTERPRISE (DBE) /
AIRPORT CONCESSIONS DISADVANTAGED BUSINESS ENTERPRISE (ACDBE) SUBCONTRACTOR/SUPPLIER**

(Form to be completed and signed for each DBE/ACDBE firm)

Solicitation Number:	Project Title:

Bidder/Offeror Name: _____

Address: _____ City: _____ State: ____ Zip: _____

Authorized Representative: _____ Phone: _____

DBE/ACDBE Subcontractor/Supplier Name: _____

Check one: Address: _____

DBE City: _____ State: ____ Zip: _____ Phone: _____

ACDBE Authorized Representative: _____

- A. This is a letter of intent between the bidder/offeror on this project and a DBE/ACDBE firm for the DBE/ACDBE to perform subcontracting work on this project, consistent with Title 49 CFR Parts 26 or 23 as applicable.
- B. By signing below, the bidder/offeror is committing to utilize the above-named DBE/ACDBE to perform the work described below.
- C. By signing below, the above-named DBE/ACDBE is committing to perform the work described below.
- D. By signing below, the bidder/offeror and DBE/ACDBE affirm that if the DBE/ACDBE subcontracts any of the work described below, it may only subcontract that work to another DBE/ACDBE if it wishes to receive DBE/ACDBE credit for said work.

Work to be performed by DBE/ACDBE Firm			
Description	NAICS*	DBE/ACDBE Contract Amount [†]	DBE/ACDBE Percentage of Total Project Value

AFFIRMATION: I hereby affirm that the information above is true and correct.

Bidder/Offeror Authorized Representative

(Signature) (Title) (Date)

DBE/ACDBE Subcontractor/Supplier Authorized Representative

(Signature) (Title) (Date)

* Visit <http://www.census.gov/eos/www/naics/> to search. Match type of work with NAICS code as closely as possible.

[†] To be provided only when the solicitation requires that bidder/offer include a dollar amount in its bid-offer.

DBE Regular Dealer/Distributor Affirmation Form



U.S. Department of
Transportation

Bidder Name:

Contract Name/Number:

Sections 26.53(c)(1) of Title 49 Code of Federal Regulations requires recipients to make a preliminary counting determination for each DBE listed as a regular dealer or distributor to assess its eligibility for 60 or 40 percent credit, respectively, of the cost of materials and supplies based on its demonstrated capacity and intent to perform as a regular dealer or distributor, as defined in section 26.55(e)(2)(iv)(A),(B),(C), and (3) under the contract at issue. The regulation requires the recipient's preliminary determination to be made based on the DBE's written responses to relevant questions and its affirmation that its subsequent performance of a commercially useful function will be consistent with the preliminary counting of such participation. The U.S. Department of Transportation is providing this form as a tool for recipients, prime contractors, regular dealers, and distributors to use to carry out their respective responsibilities under this regulation. The form may be used by each DBE supplier whose participation is submitted by a bidder for regular dealer or distributor credit on a federally-assisted contract with a DBE participation goal. The form may also be used by prime contractors in connection with DBE regular dealer or distributor participation submitted after a contract has been awarded provided such participation is subject to the recipient's prior evaluation and approval. If this form is used, it should be accompanied by the bidder's commitment, contract, or purchase order showing the materials the DBE regular dealer or distributor is supplying. Use of this tool is not mandatory. If a recipient chooses a different method for complying with Section 26.53(c)(1), it must include that method in its DBE Program Plan.

DBE Name:

Total Subcontract/Purchase Order Amount:

Authorized DBE Representative (Name and Title):

NAICS Code(s) Related to the Items to be Sold/Leased:

1. Will **all** items sold or leased be provided from the on-hand inventory at your establishment? ☐ YES ☐ NO

(If "YES," you have indicated that your performance will satisfy the regular dealer requirements and may be counted at 60%. **STOP here. Read and sign the affirmation below.** If "NO" Continue.)

- a) Are you selling bulk items (e.g., petroleum products, steel, concrete, concrete products, sand, gravel, asphalt, etc.) or items not typically stocked due to their unique characteristics (aka specialty items)? ☐ YES ☐ NO (If "YES," Go to Question 2. If "NO" Continue.)

- b) Will at least 51% of the items you are selling be provided from the inventory maintained at your establishment, and will the minor quantities of items delivered from and by other sources be of the general character as those provided from your inventory?

☐ YES ☐ NO* (If "YES," you have indicated that your performance will satisfy the regular dealer requirements and may be counted at 60%. **STOP here. Read and sign the affirmation below.**

*If 1., 1.a), and 1. b) above are "NO," your performance on the whole will not satisfy the regular dealer requirements; therefore, only the value of items to be sold or leased from inventory can be counted at 60%. (Go to Question 3. to determine if the items delivered from and by other sources are eligible for Distributor credit.)

2. Will you deliver all bulk or specialty items using distribution equipment you own (or under a long-term lease) and operate?

☐ YES ☐ NO¹

(If "YES," you have indicated that your performance will satisfy the requirements for a regular dealer of bulk items and may be counted at 60%. **STOP here. Read and sign the affirmation below.**)

¹ If "NO," your performance will not satisfy the requirements for a regular dealer of bulk items; the value of items to be sold or leased cannot be counted at 60%. (Go to Question 3.)

3. Will the written terms of your purchase order or bill of lading from a third party transfer responsibility, including risk for loss or damage, to your company at the point of origin (e.g. a manufacture's facility)? ☐ YES² ☐ NO³

- a) Will you be using sources **other than** the manufacturer (or other seller) to deliver or arrange delivery of the items sold or leased? ☐ YES² ☐ NO³

² If your responses to 3 and 3.a) are "YES," you have indicated that your performance will satisfy the requirements of a distributor; therefore, the value of items sold or leased **may** be counted at 40%.

³ If you responded "NO" to either 3 or 3.a), counting of your participation is limited to the reasonable cost of fees or commissions charged, including transportation charges for the delivery of materials or supplies; the cost of materials or supplies may not be counted.

I affirm that the information that I provided above is true and correct and that my company's subsequent performance of a commercially useful function will be consistent with the above responses. I further affirm that my company will independently negotiate price, order specified quantities, and pay for the items listed in the bidder's commitment. This includes my company's responsibility for the quality of such items in terms of necessary repairs, exchanges, or processing of any warranty claims for damaged or defective materials.

Printed Name and Signature of DBE Owner/Authorized Representative:

The bidder acknowledges its responsibility for verifying the information provided by the DBE named above and ensuring that the counting of the DBE's participation is accurate. Any shortfall caused by errors in counting are the responsibility of the bidder.

Printed Name and Signature of Bidder's Authorized Representative:

END OF SECTION

DOCUMENT 00 05 80

INFORMATION FOR DETERMINING JOINT VENTURE ELIGIBILITY

Bidder: _____

INFORMATION FOR DETERMINING JOINT VENTURE ELIGIBILITY

(This form need not be filled in if all joint venture firms are disadvantaged owned.)

1. Name of joint venture: _____
2. Address of joint venture: _____
3. Phone number of joint venture: _____
4. Identify the firms, which comprise the joint venture. (The DBE partner must complete Section 000520 - Equal Opportunity Report Statement attached to the Bid.)
 - (a) Describe the role of the DBE firm in the joint venture.
 - (b) Describe very briefly the experience and business qualifications of each non-DBE joint venture.
5. Nature of joint venture's business: _____
6. Provide a copy of the joint venture agreement.
7. What is the Claimed percentage of the DBE Ownership? _____
8. Ownership of joint venture: (This need not be filled in if described in the joint venture agreement, provided in question 6.)
 - (a) Profit and loss sharing
 - (b) Capital contributions, including equipment
 - (c) Other applicable Ownership interests
9. Control of and participation in this Contract. Identify by name, race, sex and firm those individuals (and their titles) who are responsible for Day-to-Day management and policy decision-making, including, but not limited to, those with prime responsibility for:
 - (a) Financial decisions: _____
 - (b) Management decisions, such as: _____
 - (1) Estimating: _____
 - (2) Marketing and sales: _____

(3) Hiring and firing of management personnel: _____

(4) Purchasing of major items or supplies: _____

(c) Supervision of field operations: _____

NOTE: If, after filing this disclosure and before the completion of the joint venture's Work on the Contract covered by this regulation, there is any significant change in the information submitted, the joint venture must inform the Owner, either directly or through the Bidder if the joint venture is a Subcontractor.

END OF SECTION

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DOCUMENT 00 05 90

AFFIDAVIT

Bidder:_____

AFFIDAVIT

"The undersigned swears that the foregoing statements are true and correct and include all material information necessary to identify and explain the operations of (Name of Firm)_____ as well as the ownership thereof. Further, the undersigned agrees to provide, through the prime Contractor or, if no prime, directly to the Owner, current, complete, and accurate information regarding actual Work performed on the Project, the payment therefore, and any proposed changes, if any, of the foregoing arrangements and to permit the audit and examination of books, records and files of the named firm. Any material misrepresentation will be grounds for terminating any Contract which may be awarded and for initiating action under Federal and State laws concerning false statements."

NOTE: If, after filing this form and before the Work of this firm is completed on the Contract covered by this regulation, there is any significant change in the information submitted, you must inform the Owner of the change through the prime Contractor or, if no prime Contractor, inform the Owner directly.

Signature:_____

Name (print or type):_____

Title:_____ Date:_____

Corporate Seal (where appropriate):

State of:_____

County of:_____

I, the undersigned, a Notary Public in and for said County in said State, do hereby certify that _____(Name), whose name as _____(Corporation/Partnership/LLC), is signed to the foregoing instrument and who is known to me, acknowledged before me on this date that being informed of the contents of said instrument, he, as such officer and with full authority, executed the same voluntarily for and as the act of said _____(Corporation/Partnership/LLC) on the Day the same bears date.

Given under my official hand and seal this the:_____ Day of _____, 20____

(NOTARY SEAL)

Notary Public:_____

My Commission expires:_____

END OF SECTION 00 05 90

DOCUMENT 00 06 00

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____, as Principal, and, _____ as Surety, are held and firmly bound unto the Birmingham Airport Authority (herein "Owner"), in the penal sum of DOLLARS (\$) _____ for the payment of which, well and truly to be made we hereby jointly and severally bind ourselves, our successors and assigns.

SIGNED THIS ____ Day of __, 20__.

The condition of the above obligation is such that whereas the principal has submitted to the Owner a certain Bid, attached hereto and made a part hereof, to enter into a Contract in writing for:

Taxiway Alpha Emergency Patching, Birmingham-Shuttlesworth International Airport

NOW, THEREFORE, if

- A. Said Bid shall be rejected; or
- B. 120 Days expire from the time and date fixed for opening of Bids before Notice of Intent to Award the Contract is given to Principal; or
- C. Notice of Intent to Award the Contract is given to the Principal and the Principal shall, within ten (10) Days after the date of the Notice of Intent to Award the Contract, execute and deliver a Contract in the form of the Contract Agreement contained in the Contract Documents, properly completed in accordance with the Instructions to Bidders; and shall furnish a Performance Bond for its faithful performance of the Contract and a Payment Bond for the payment of all persons performing labor or furnishing materials or supplies in connection therewith, in the forms contained in the Contract Documents; and shall provide satisfactory evidence of all required insurance coverage; and shall provide evidence satisfactory to the Owner of the authority of the person or persons executing the Contract Documents and all other documents on its behalf; and shall provide the statements, certifications and data relating to Equal Employment Opportunity, Non-Segregated Facilities, and Disadvantaged Business Enterprises identified in the Instructions to Bidders; and shall in all other respects perform its obligations pursuant to the terms of the Bid;

then this obligation shall be void, otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all Claims hereunder shall, in no event, exceed the Penal Sum of this obligation as herein stated. The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its Bond shall be in no way impaired or affected by any extension of the time within which the Owner may provide Notice of Intent to Award the Contract or within which the Principal or the Owner may execute, deliver, furnish, provide or perform its obligations, and the Surety does hereby waive notice of any such extensions.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, on the Day and year first set forth above.

Signed, sealed and delivered in the presence of:

(Name of Principal)

By: _____

Name: _____

Title: _____

Countersignature of Alabama
Resident Agent)

(SEAL)

(Name of Surety)

By: _____

Name: _____

Title: _____

(SEAL)

Note: If Principal or Surety are corporations, the respective corporate seals should be affixed and attached.

IMPORTANT: Surety companies executing Bonds must: (1) be rated "B" as to management and no less than "IV" as to strength by the latest edition of Best's Insurance Guide for Contracts with a Contract Sum greater than or equal to \$100,000; (2) appear on the Treasury Department's most current list (Circular 570 as amended); and (3) be authorized to transact business in the State of Alabama

END OF SECTION

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DOCUMENT 00 07 00

AWARD AND EXECUTION OF CONTRACT

1. **CONSIDERATION OF BIDS.** After the Bids 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, unit prices shall govern.

Until the award of a Contract is made, the Owner reserves the right to reject a Bidder's Proposal for any of the following reasons:

- a. If the Proposal is irregular as specified in the Subsection titled irregular Proposals of Section 000300.
- b. If the Bidder is disqualified for any of the reasons specified in the Subsection titled Disqualification of Bidders of Section 000300.

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 federal, 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 Owners best interests.

2. **AWARD OF CONTRACT.** The award of a Contract, if it is to be awarded, shall be made within 180 Calendar Days after 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.

No award shall be made until the TSA has concurred with the Owners recommendation to make such Award and has approved the Owner proposed Contract to the extent that such concurrence and approval are required by Federal Regulations.

3. **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.
4. **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 the two lowest Bidders will be retained by the Owner until such time as an Award is made, at which time, the unsuccessful Bidder's Proposal Guaranty will be returned. The successful Bidder's Proposal Guaranty will be returned as soon as the Owner receives the Contracts Bonds as specified in the Subsection titled Requirements of Contract Bonds of this Section.
5. **REQUIREMENTS OF CONTRACT BONDS.** At the time of the execution of the Contract, the successful Bidder shall furnish the Owner a Payment Bond and a Performance Bond (collectively, the "Surety Bond or Bonds) which 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 Total Contract Price.

- 6. EXECUTION OF CONTRACT.** The successful Bidder shall sign (execute) the 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.

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 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 Owner deems applicable.

Organization of the Specifications into divisions, sections and articles, and arrangement of Plans or Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

- 7. APPROVAL OF CONTRACT BY OWNER; INTENT.** Upon receipt of the Surety 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.

The intent of the Contract Documents is to include all information necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one portion shall be as binding as if required by all. Performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable as being necessary to produce the intended results. The Plans or Drawings indicate arrangements and results to be accomplished and the Contractor shall provide such fastenings and accessories necessary, therefore. Subject to Subsection 8 of this Section, where a conflict exists between or within the Contract Documents, the more stringent requirements shall apply.

- 8. ORDER OF PRECEDENCE.** The order of precedence for the Contract Documents shall be as follows:

- 8.1** Contract Modifications
- 8.2.** Addenda
- 8.3** Contract Agreement between Owner and Contractor
- 8.4** Special Provisions
- 8.5.** General Provisions

- 8.6 Specifications and Drawings. Drawings take precedence over Specifications as to quantity and location. Specifications take precedence over Drawings as to quality of materials and Workmanship.
- 8.7 Unit Price Schedules (if applicable) contained in the Contractor's Bid
- 8.8 Instructions to Bidders and all portions thereof containing information required from the Contractor
- 8.9 Invitation to Bid
- 8.10 Measurements by Scale

The order of preference of terms within the Contract Documents are set forth in section 001000, subsection 3. Subject to the foregoing provisions of this Subsection, the more stringent requirements shall apply in the event any conflicts cannot be resolved by applying the order of precedence.

- 9. **FAILURE TO EXECUTE CONTRACT.** Failure of the successful Bidder to execute the Contract and furnish an acceptable Surety Bond within the 10 Calendar Day period specified in the Subsection titled Execution of Contract of this Section shall be just cause for cancellation of the Award and forfeiture of the Proposal Guaranty, not as a penalty, but as liquidation of damages to the Owner.

10. OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS

All Drawings, Specifications, Contract Documents and other documents prepared by the Engineer are and shall remain the property of the Owner, and the Owner shall retain all common law, statutory and other reserved rights with respect thereto. They shall not be used on any other Project without the prior written consent of the Owner, and the Contractor shall take such action as may be necessary to prevent their use on any other Project or for additions to the Project outside the scope of the Work by any Subcontractor or material and equipment supplier. The Contractor, Subcontractors, and material and equipment suppliers are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Engineer appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this license shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Engineer. Submittals or distributions necessary to meet official regulatory requirements or for other purposes relating to completion of the Project are not to be construed as a publication in derogation of the Owner's copyright or other reserved rights.

END OF SECTION

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DOCUMENT 00 07 10

NOTICE OF INTENT TO AWARD CONTRACT termination

DATE: _____ TO: Prime Contractor to be Determined
PROJECT: **Taxiway Alpha Emergency Patching**

The Owner has reviewed the Bid submitted by you for the Work in connection with the above-described Project in response to its Advertisement for Bids initially dated 2025 the Instructions to Bidders, the Contract Documents, all as modified during the bidding process.

You are hereby notified that your Bid is being considered for acceptance for the Project in the Total Amount of \$_____, subject to the availability of TSA funds.

You are required by the Instructions to Bidders to execute the enclosed five (5) copies of the Contract Agreement and Contract Documents and furnish the required Contractor's Performance Bond, Payment Bond, evidences of all required insurance coverage and authority to execute plus satisfactory evidence of compliance with the Bid conditions pertaining to the Disadvantaged Business Enterprise Program within ten (10) Calendar Days after the date of this Notice of Intent to Award Contract to you.

If you fail to execute said Contract Documents and to furnish said Bonds and other required documents and information within ten (10) Calendar Days after the date of this Notice of Intent to Award Contract, the Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Intent to Award Contract to the Owner within ten (10) Calendar Days after the date hereof.

Dated this _____ day of _____, 2025.

Owner:
Birmingham Airport Authority

By: _____
Name
Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Intent to Award Contract is hereby acknowledged by the undersigned this the _____ day of _____, 20 25.

Contractor: Prime Contractor to be Determined.

By: _____
Name
Title: _____

END OF SECTION

DOCUMENT 00 08 00

CONTRACT AGREEMENT

CONTRACT AGREEMENT

THIS AGREEMENT was made and entered into this _____ day of _____ of the year 20_____, by and between the BIRMINGHAM AIRPORT AUTHORITY, hereinafter called the "Owner", and Construction Works, Incorporated, hereinafter called the "Contractor".

WITNESSETH, that the Contractor, for and in consideration of the payments hereinafter specified and agreed to be made by the Owner, hereby covenants and agrees to furnish and deliver all of the materials and supplies, to do and perform all of the Work and labor required to be furnished and delivered, done and performed for **"Taxiway Alpha Emergency Patching "**, and to complete the Work within the Total Contract Time Three-Hundred and Sixty-five (365) Calendar Days in conformity with the Plans, Drawings, Specifications and all other Contract Documents on file at the office of the President and CEO of the Birmingham Airport Authority, which Plans, Drawings, Specifications and other Contract Documents are incorporated herein and made a part of this Agreement with the same effect as if they had been set forth fully in the body of this Agreement. Furthermore, the Contractor hereby agrees to comply with all applicable rules and regulations of the FAA and/or Birmingham Airport Authority as they relate to Airport security, regardless of the status of security in force at the Airport during the construction of the Work.

The Contractor agrees to make timely payment of all proper charges for labor, materials, supplies and services required in connection with the aforementioned Work, and without limiting any other indemnification provisions in this Contract or the Contract Documents, to defend, indemnify, and save harmless the Owner and all their members, officers, agents, employees and servants, and each and every one of them, from and against any and all claims, damages losses and expenses, including but not limited to attorneys' fees arising out of or resulting from the performance of the Work, the breach of the Contract or the Contract Documents by Contractor or any act or omission on the part of the Contractor, its agents, employees, servants or any other person or entity for whom the Contractor is responsible.

If the Contractor shall fail to comply with any of the terms, conditions, provisions, or stipulations of this Contract, according to the true intent and meaning thereof, then the Owner may avail itself of any or all remedies provided in the Contract and shall have the right and power to proceed in accordance with the provisions thereof.

The acceptance of Final Payment by the Contractor shall be considered as a release in full of all Claims against the Owner or any of its members, directors, officers, agents, employees or servants directly or indirectly arising out of, or by reason of, the Work or labor performed or the materials, services or supplies furnished under or in connection with this Contract, except for those Claims, disputes and other matters arising out of or relating to said Contract which have been raised by written demand in accordance with the Contract Documents prior to said date of Final Payment and identified by the Contractor as unsettled in the final Application for Payment and are in arbitration, mediation or court litigation in accordance with the Contract Documents.

In consideration of the premises, the Owner will pay to the Contractor for the said Work, when fully completed, the Total Contract Price of four million, nine hundred and fifty thousand **Dollars (\$-_____)** subject to such additions and deductions as may be provided for in the Contract Documents. Payments shall be made upon the terms set forth in the Contract Documents.

Within 30 days after receipt of an approved estimate, the Owner shall make Partial Payment to the Contractor on the basis of duly certified and approved estimate of Work performed during the preceding calendar month by the Contractor, less ten percent (10%) of the amount of such estimate until such time as the Work is fifty

percent (50%) complete as determined by the Engineer. After such time, Owner will not retain any additional amounts from Contractor's subsequent Applications for Payment until all Work has been performed strictly in accordance with this Agreement; provided, however, Owner may continue to withhold the ten percent (10%) previously withheld.

Payments shall be made at the Unit Prices and/or lump sums specified for the various Bid Items in the Contractor's Schedule of Prices Bid, as provided for and upon the terms set forth in the Contract Documents. It is understood that the total amount to be paid shall be based on the said unit prices and/or lump sums contained in said Schedule of Prices Bid and Bid and made a part of this Agreement for the Work actually completed in accordance with the Contract Documents.

Unless otherwise declared in an Addendum hereto, Contractor warrants to Owner that no member, officer or employee of the Owner has any material interest, either directly or indirectly, in the business of the Contractor to be conducted hereunder, and that no such persons shall have any such interest at any time during the term hereof.

This Contract shall be binding upon the Owner, its successor or assigns, and upon the Contractor and its heirs, executors, administrators, successors and assigns, and is voidable and may be terminated by the Owner, in accordance with the provisions of the Contract Documents which are made a part of this Agreement, or if the provisions of the statutes relative thereto are not complied with.

IN WITNESS WHEREOF, the said BIRMINGHAM AIRPORT AUTHORITY has caused this Contract to be executed in its name by its Chairman of the Board or another authorized Officer; and attested by its President/CEO, Secretary, Assistant Secretary or other authorized Officer, and has caused its seal to be hereto attached; and the Contractor has caused this Contract to be executed in its name by

_____, its President, attested by _____, its VP of Operations, and, if a corporation, has caused the seal of said corporation to be hereunto attached, all on the Day and year first above written.

Signed, sealed and delivered in the presence of:

BIRMINGHAM AIRPORT AUTHORITY

Attest: _____
Name: _____
Title: _____

By: _____ (Seal)
Name: Ronald F. Mathieu
Title: President and CEO

(If Contractor is a Corporation)

Attest: _____
Name: _____
Title: _____

By: _____ (Seal)
Name: _____
Title: _____

(CORPORATE SEAL)

(If Contractor is a Partnership or Limited Liability Company)

(Name of Contractor)

Attest: _____

Name: _____

Title: _____

By: _____ (Seal)

Name: _____

Title: _____

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DOCUMENT 00 08 10

PERFORMANCE / PAYMENT BOND COVER SHEET

BIRMINGHAM AIRPORT AUTHORITY
BIRMINGHAM, ALABAMA
(Public Work) In Compliance with Alabama Statute

PERFORMANCE BOND NO.:

PAYMENT BOND NO.:

CONTRACTOR INFORMATION:

Name:

Address:

Phone:

SURETY INFORMATION:

Name:

Address:

Phone:

OWNER INFORMATION:

Name:

Birmingham Airport Authority

Address:

5900 Messer Airport Highway
Birmingham, ALABAMA 35212

Phone:

(205) 595-0533

BOND AMOUNT:

BAA PROJECT NO.:

N/A

DESCRIPTION OF WORK:

Taxiway Alpha Emergency Patching

PROJECT LOCATION:

Birmingham-Shuttlesworth International Airport,
Birmingham, Alabama

AGENT INFORMATION:

Name:

Address:

Phone:

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

AIP Project NO AF-064

END OF SECTION

DOCUMENT 00 08 20

PERFORMANCE BOND FORM

**BIRMINGHAM AIRPORT AUTHORITY
BIRMINGHAM, ALABAMA**

KNOW ALL MEN BY THESE PRESENTS that _____, hereinafter called Principal, and _____, a corporation organized under the laws of the State of ____ and licensed to do business in the State of Alabama, hereinafter called Surety, are held and firmly bound unto the Birmingham Airport Authority, hereinafter called Owner, in the Penal Sum of (\$ _____), for the payment of which sum well and truly made, Principal and Surety bind ourselves, our heirs, personal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____, 20____, entered into a Contract Agreement with Owner for "Checked Bags Resolution Area Expansion, Birmingham- Shuttlesworth International Airport," in accordance with the Contract Documents which are incorporated herein by reference and made a part hereof, and are herein referred to as the Contract.

WHEREAS Surety is authorized to do business in the State of Alabama.

NOW, THEREFORE, the condition of this obligation is such that if Principal:

1. Promptly and faithfully performs all of the terms, covenants and condition of the Contract including, but not limited to, its warranty provisions, in the time and manner prescribed in the Contract, and
2. Pays Owner all losses, damages (liquidated or actual, including, but not limited to, damages caused by delays in performance of the Principal), expenses, costs and attorneys' fees, including appellate proceedings, that Owner sustains resulting directly or indirectly from any breach or default by Principal under the Contract, and
3. Pays Owner all losses, damages, expenses, costs, attorneys' fees and other legal costs (including, but not limited to, those for investigative and legal support services), including those incurred in appellate proceedings, that the Owner sustains resulting directly or indirectly from conduct of the Principal including, but not limited to, want of care or skill, negligence, patent infringement, or intentionally wrongful conduct on the part of the Principal, its officers, agents, employees or any other person or entity for whom the Principal is responsible, then this bond is void; otherwise it shall remain in full force and effect.

In the event that the principal shall fail to perform any of the terms, covenants and conditions of the Contract during the period in which this Performance Bond is in effect, the Surety shall remain liable to the Owner for all such loss or damage (including reasonable attorneys' fees and other legal costs) resulting from any failure to perform up to the amount of the Penal Sum.

In the event that the Surety fails to fulfill its obligations under this Performance Bond, then the Surety shall also indemnify and save the Owner harmless from any and all loss, damage, cost and expense, including reasonable

attorneys' fees and other legal costs for all trial and appellate proceedings resulting directly or indirectly from the Surety's failure to fulfill its obligations hereunder. This Subsection shall survive the termination or cancellation of this Performance Bond. The obligations set forth in this Subsection shall not be limited by the Penal sum of this Bond.

The Surety's obligations hereunder shall be direct and immediate and not conditional or contingent upon Owner's pursuit of its remedies against Principal, and shall remain in full force and effect notwithstanding

- (i) amendments or modifications to the Contract entered into by Owner and Principal without the Surety's knowledge or consent,
- (ii) waivers of compliance with or any default under the Contract granted by Owner to Principal without the Surety's knowledge or consent,
- (iii) the discharge of Principal from its obligations under the Contract as a result of any proceeding initiated under The Bankruptcy Code of 1978, as the same may be amended, or any similar state or federal law, or any limitation of the liability of Principal or its estate as a result of any such proceeding, or
- (iv) any other action taken by Owner or Principal that would, in the absence of this clause, result in the release or discharge by operation of law of the Surety from its obligations hereunder.

The institution of suit upon this Bond is subject to not less than a two-year and not more than a three-year limitations period in accordance with current, Alabama Statutes.

Any changes in or under the Contract Documents (which include the Plans, Drawings and Specifications) and compliance or noncompliance with any formalities connected with the Contract or the changes therein shall not affect Surety's obligations under this Bond and Surety hereby waives notice of any such changes. Further, Principal and Surety acknowledge that the Penal Sum of this bond shall increase or decrease in accordance with approved changes or other modifications to the Contract Documents.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument under their several seals on this _____ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and these presents fully signed by its undersigned representative, pursuant to authority of its governing body.

Signed, sealed and delivered

in the presence of:

Principal

By: _____
Name and Title

(SEAL)

Address:

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

(Countersignature by an Alabama Registered Agent)

Address:

NOTE: If Principal or Surety are corporations, the respective corporate seals should be affixed and attached.

Attach a certified copy of Power-of-Attorney appointing individual Attorney-in-Fact for execution of Performance Bond on behalf of Surety.

END OF SECTION

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DOCUMENT 00 08 30

PAYMENT BOND FORM

**BIRMINGHAM AIRPORT AUTHORITY
BIRMINGHAM, ALABAMA**

KNOW ALL MEN BY THESE PRESENTS that _____, hereinafter called Principal, and _____, a corporation organized under the laws of the State of ____ and licensed to do business in the State of Alabama, hereinafter called Surety, are held and firmly bound unto the Birmingham Airport Authority, hereinafter called Owner, in the Penal Sum of (\$ _____), for the payment of which sum well and truly made, Principal and Surety bind ourselves, our heirs, personal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____, 20____, entered into a Contract Agreement with Owner for " Taxiway Alpha Emergency Patching, Birmingham- Shuttlesworth International Airport," in accordance with the Contract Documents which are incorporated herein by reference and made a part hereof, and are herein referred to as the Contract.

WHEREAS, Surety is authorized to do business in the State of Alabama.

NOW, THEREFORE, the condition of this obligation is such that if Principal shall promptly make payments to all persons, firms, Subcontractors and corporations, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect subject, however, to the following conditions:

1. This bond is furnished for the sole purpose of complying with the requirements of Alabama Statutes.
2. It is a specific condition of this bond that a Claimant's right of action on the bond is limited to the provisions of Alabama Statutes, including, but not limited to, the one-year time limitation within which suits may be brought.

Therefore, a Claimant, except a laborer, who is not in privity with the Contractor and who has not received payment for its labor, materials or supplies shall, within forty-five (45) Days after beginning to furnish labor, materials or supplies for the prosecution of the Work, furnish the Contractor with a notice that it intends to look to the bond for protection. A Claimant who is not in privity with the Contractor and who has not received payment for its labor, materials or supplies shall within ninety (90) Days after performance of the labor or completion of delivery of the materials or supplies, deliver to the Contractor and to the Surety written notice of the performance of the labor or delivery of the materials or supplies and of the nonpayment. No action for the labor, materials or supplies may be instituted against the Contractor or the Surety unless both notices have been given. No action shall be instituted against the Contractor or the Surety on the bond after one (1) year from the performance of the labor or completion of the delivery of the materials or supplies.

3. The Surety's obligations hereunder shall remain in full force and effect notwithstanding;

(i) amendments or modifications to the Contract entered into by Owner and Principal without the Surety's knowledge or consent,

(ii) waivers of compliance with or any default under the Contract granted by Owner to Principal without the Surety's knowledge or consent,

(iii) the discharge of Principal from its obligations under the Contract as a result of any proceeding initiated under The Bankruptcy Code of 1978, as the same may be amended, or any similar state or federal law, or any limitation of the liability of Principal or its estate as a result of any such proceeding, or

(iv) any other action taken by Owner or Principal that would, in the absence of this clause, result in the release or discharge by operation of law of the Surety from its obligations hereunder.

4. Any changes in or under the Contract Documents (which include the, Drawings and Specifications) and compliance or noncompliance with any formalities connected with the Contract or the changes therein shall affect Surety's obligations under this Bond and Surety hereby waives notice of any such changes. Further, Principal and Surety acknowledge that the Penal Sum of this Bond shall increase or decrease in accordance with the approved changes or other modifications to the Contract Documents.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument under their several seals on this _____ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and these presents fully signed by its undersigned representative, pursuant to authority of its governing body.

Signed, sealed and delivered
in the presence of:

Principal

By: _____
Name and Title

(SEAL)

Address:

(Countersignature by an Alabama Registered Agent)

Address:

NOTE: If Principal or Surety are corporations, the respective corporate seals should be affixed and attached.

Attach a certified copy of Power-of-Attorney appointing individual Attorney-in-Fact for execution of Performance Bond on behalf of Surety.

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

AIP Project NO AF-064

END OF SECTION

DOCUMENT 00 08 40

PERFORMANCE / PAYMENT BOND CERTIFICATION FORM

**BIRMINGHAM AIRPORT AUTHORITY
BIRMINGHAM, ALABAMA**

I, _____, certify that I am the Secretary of the corporation named as Principal in the foregoing Performance and Payment Bonds; that _____ who signed the said Bonds on behalf of the Principal was then _____ of said corporation; that I know [his, her] signature, and [his, her] signature thereto is genuine, and that said Bonds were duly signed, sealed and attested for and in behalf of said corporation by authority of its governing body.

Secretary Signature

Secretary Printed Name

(Corporate Seal)

Attach a Certificate of Insurance and/or Policy Binder indicating that Contractor has obtained Contractor Liability and other required insurance.

Attach a Certificate of Insurance and/or Policy Binder indicating that Contractor has obtained the required Owner Protection Liability Insurance.

END OF SECTION

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DOCUMENT 00 08 50

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, _____, the duly authorized and acting legal representative of the Birmingham Airport Authority, do hereby certify as follows:

I have examined the attached Contract and Surety Bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof; subject to the following:

- (a) Insofar as the Certificate relates to the due execution of the Contract and the Surety Bonds by the Contractor and the Surety, the due authority of the representative(s) of the Contractors or the Surety who executed the Contract of the Contractor or the Surety to execute the Contract(s) and the Surety Bonds on behalf of the Contractor or the Surety, as the case may be, and the power and authority of the Contractor and the Surety to execute the Contract and the Surety Bonds, I have relied solely on the attached opinions of counsel for the Contractor and the Surety.
- (b) This certificate does not relate to the laws of any jurisdiction other than the State of Alabama.

(Name and Title)

Date: _____

END OF SECTION

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DOCUMENT 00 08 60

CERTIFICATE OF SURETY'S ATTORNEY

Birmingham Airport Authority
Birmingham-Shuttlesworth International Airport
5900 Messer Airport Highway
Birmingham, Alabama 35212

Re: Surety Bond No. _____(the "Surety Bond")

Gentlemen:

I have acted as counsel for _____, a company/corporation organized under the laws of the State of _____ ("Surety"). I have examined executed or certified copies of the above- referenced Surety Bond and the certificate of incorporation, bylaws and such other pertinent corporation proceedings and documents of the Surety that I have deemed necessary in connection with the opinions hereinafter set forth.

Based on the foregoing and such other investigation as I have deemed necessary, I am of the opinion that:

1. The Surety has been duly organized and validly exists in good standing under the laws of Alabama.
2. The Surety has corporate power and authority to enter into and perform its obligation under the Surety Bonds. The execution and delivery of the Surety Bonds and the performance by the Surety of its obligation thereunder have been duly authorized by requisite corporate action and the Surety Bonds have been duly executed and delivered by the Surety. The Surety constitutes a legal, valid and binding obligation of the Surety and is enforceable against the Surety in accordance with the terms of such instrument.

The enforceability of the obligations of the Surety under the Surety Bond may be limited by (i) bankruptcy, insolvency or other similar laws affecting the enforcement of creditors' rights and (ii) general principles of equity, regardless of whether such enforceability is considered in a proceeding at equity or at law.

Very truly yours,

(Name and Title)

Date: _____

Address:

END OF SECTION

DOCUMENT 00 08 70

CERTIFICATE OF CONTRACTOR'S ATTORNEY

Birmingham Airport Authority
Birmingham-Shuttlesworth International Airport
5900 Messer Airport Highway
Birmingham, Alabama 35212

Re: Taxiway Alpha Emergency Patching

Gentlemen:

I have acted as counsel for _____, a company/corporation organized under the laws of the State of _____ ("Contractor"). I have examined executed or certified copies of the above- referenced Contract and the certificate of incorporation, bylaws and such other pertinent corporation proceedings and documents of the Contractor that I have deemed necessary in connection with the opinions hereinafter set forth.

Based on the foregoing and such other investigation as I have deemed necessary, I am of the opinion that:

1. The Contractor has been duly organized and validly exists in good standing under the laws of Alabama.
2. The Contractor has corporate or other entity power and authority to enter into and perform its obligation under the Contract. The execution and delivery of the Contract and the performance by the Contractor of its obligation there under have been duly authorized by requisite corporate or other entity action and the Contract has been duly executed and delivered by the Contractor. The Contract constitutes a legal, valid and binding obligation of the Contractor and is enforceable against the Contractor in accordance with the terms of such instrument.

The enforceability of the obligations of the Contractor under the Contract may be limited by

(i) bankruptcy, insolvency or other similar laws affecting the enforcement of creditors rights and (ii) general principles of equity, regardless of whether such enforceability is considered in a proceeding at equity or at law.

Very truly yours,

(Name and Title)

Date: _____

(Address)

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

AIP Project NO AF-064

END OF SECTION

DOCUMENT 00 08 80

NOTICE TO PROCEED

DATE: _____

TO: _____

PROJECT: **Taxiway Alpha Emergency Patching**
Birmingham-Shuttlesworth International Airport

You are hereby given notice to commence Work in accordance with the Contract Agreement and Contract Documents dated _____, 20____, on or before __, 20____("Commencement Date"). The date of completion of all Work to be performed under the Contract Documents is therefore _____, 20____. You are required to return an acknowledged copy of this Notice to Proceed to the Owner on or before the Commencement Date.

Dated this _____ day of _____, 20____

Owner:

Birmingham Airport Authority

By: _____

Name: _____

Title: _____

ACCEPTANCE OF NOTICE TO PROCEED

Receipt of the above Notice of Intent to Award Contract is hereby acknowledged by the undersigned this the _____ day of _____, 20____.

Contractor: _____

By: _____

Name: _____

Title: _____

END OF SECTION

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DOCUMENT 00 09 00

ADMINISTRATION OF THE CONTRACT

1. ROLE OF THE ENGINEER

- 1.1** The Engineer is the person or entity lawfully licensed in Alabama to provide engineering services identified as such in the Contract Documents and is referred to throughout the Contract Documents as if singular in number. The term "Engineer" means the Engineer or the Engineer's authorized representative or agent, including the Resident Project Representative (RPR) assigned to the Project
- 1.2** The Engineer will assign to and maintain in attendance at the Project site at all time Work is being performed, a RPR who will at all times be familiar with the progress and quality of the Work. The Engineer shall determine whether the Work is being performed in a manner such that when the Work is completed it will be in accordance with the Contract Documents. The Engineer will make on-site inspections as often as the Engineer deems necessary to check quality or quantity of the Work and to inform the Owner and the Contractor when any such Work is not in accordance with the Plans, Specification and Contract Documents. The RPR will perform the daily inspections.
- 1.3** The Engineer is authorized to reject Work which does not conform to the Contract Documents. Whenever the Engineer considers it necessary or advisable, the Engineer is authorized to require additional inspection, examination or testing of the Work, regardless of the stage of completion or delivery of the Work. However, neither this authority of the Engineer nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Engineer to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.
- 1.4** Based on the Engineer's inspections and the Engineer's review of the Contractor's Applications for Payment, the Engineer will review and certify the amounts due the Contractor and will process Certificates for Payment in such amounts. The Engineer will forward Contractor's Applications for Payment to the Owner or OAR for approval.
- 1.5** The Engineer will review and take appropriate action upon the Contractor's Submittals such as shop drawings, product data and samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Engineer's action will be taken with such reasonable promptness as to avoid or minimize delay in the Work or in the activities of the Owner, Contractor, or separate contractors, while allowing sufficient time in the Engineer's professional judgment to permit adequate review. Review of such Submittals is not conducted for the purpose of substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Engineer's review of the Contractor's Submittals shall not relieve the Contractor of any obligations for the same set forth in the Contract. The Engineer's review of and action concerning a specific item shall not indicate review of and action concerning an assembly of which the item is a component.

- 1.6 The Engineer is the final interpreter of the technical requirements and intent of the Contract Documents. The Engineer, within a reasonable period of time after receipt of a written request therefore, shall render such interpretations to the Contractor with respect to the Drawings and Specifications which the Engineer or OAR deem necessary for the proper execution and progress of the Work written request therefore, shall render such interpretations to the Contractor with respect to the Drawings and Specifications which the Engineer or OAR deem necessary for the proper execution and progress of the Work
- 1.7 Interpretations and decisions of the Engineer will be consistent with the intent of and reasonably inferable from the Contract Documents and will be rendered in writing or in the form of Drawings
- 1.8 The Engineer's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents
- 1.9 The Engineer will conduct inspections with the OAR and Contractor to determine the date or dates of Substantial Completion and the date of Final Completion. The Engineer will receive and forward to the OAR for review written warranties and related close-out documents required by the Contract Documents and assembled by the Contractor and will approve a final Certificate of Payment upon the Contractor's compliance with requirements of the Contract Documents.
- 1.10 The Engineer will not have control over, charge of nor be responsible for construction means, methods, techniques, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility as provided in Section 001200, Control of Work. The Engineer shall not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.
- 1.11 The Engineer is the party through whom all communications shall be transmitted to and from the Contractor and Owner. However, the Owner and Contractor are not precluded from direct communications. The Contractor and Owner shall copy the Engineer with all communications between the Owner and the Contractor if such direct communication occurs. Communications by and with Subcontractors and material suppliers shall be through the Contractor to the Engineer.
- 1.12 The Engineer will prepare Change Orders, Construction Change Directives, and Field Change Orders, and the Engineer may authorize minor changes in the Work as provided in Subsection 7 in Section 001100.
- 1.13 Nothing in this Subsection 1 of Section 000900 is intended to limit the Engineer's authority under Subsection 1 of Section 001200.

2. ROLE OF THE OWNER'S AUTHORIZED REPRESENTATIVE (OAR)

- 2.1 The OAR shall provide administration of the Contract as described in the Contract Documents and shall be selected by the Owner. The specific person or entity which will perform the OAR's responsibilities shall be identified at the Pre-Construction Conference.

- 2.2 The OAR is the party through whom all communications shall be transmitted to and from the Owner to the Engineer. However, the Owner and Engineer are not precluded from direct communications. The Contractor's communications with separate contractors of the Owner shall be through the OAR
- 2.3 The OAR will cooperate with the Engineer and the Contractor in the Engineer's inspections to determine the date or dates of Substantial Completion and the date of Final Completion, will receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract Documents and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance and in accordance with the requirements of the Contract Documents. Receipt by the Engineer or Owner of warranties and related documents at variance with the requirements of the Contract Documents shall not be deemed acceptance of a modification of the Contract Documents or a waiver of any requirement of the Contract documents, all such submissions being subject to the approval of the Owner and Engineer.
- 2.4 The OAR will not have control over, charge of nor be responsible for construction means, methods, techniques, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility as provided in Subsection 3 of Section 00120. The OAR shall not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The OAR shall not be responsible or have control over acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons performing portions of the Work. However, in the event the Contract Documents expressly require the Contractor to use specific means, methods, techniques, or procedures, the Contractor shall perform the Work in accordance with those express requirements.

3. STANDARD FORMS

The following forms shall be utilized in the execution of the Work and administration of the Contract:

- 3.1 **REQUEST FOR INFORMATION (RFI):** A RFI shall be utilized in the field to present any questions or clarifications requested by the Contractor. The Engineer or OAR shall, upon receipt, forward the RFI to the appropriate source who will respond to the RFI in writing. The Engineer or OAR shall provide the Contractor with a copy of the written response to the RFI with reasonable promptness to avoid or minimize delay in the progress of the Work.
- 3.2 **REQUEST FOR CHANGE ORDER (RCO):** A RCO shall be utilized by the Contractor to formally present any request for monetary, time, or Contractual adjustment. The RCO shall specifically provide justification for entitlement to the change and shall be substantiated in accordance with Subsection 5 of Section 00110 of the Contract.
- 3.3 **ENGINEER'S SUPPLEMENTAL INSTRUCTION (ASI):** An ASI shall be utilized by the Engineer to provide clarifications or supplemental information to the Contractor. The intent of the ASI is for the Engineer to clarify and supplement the existing requirements of the Contract. An ASI is not intended to modify the scope of Work.

- 3.4 **BULLETIN:** A Bulletin shall be utilized by the Engineer to indicate proposed modifications to the Drawings or Specifications. Upon receipt of a Bulletin, the Contractor shall submit a detailed breakdown of costs (adds or deducts) in the form of a RCO for review by the Owner.
- 3.5 **CHANGE ORDER (CO):** A CO may be utilized to formalize modifications to the Contract after its execution when agreed to by the Owner and Contractor.
- 3.6 **CONSTRUCTION CHANGE DIRECTIVE (CCD):** A CCD may be utilized to express a written order prepared by the Owner directing a change in the Work and stating a proposed basis for adjustment (if any) in accordance with Subsection 6 Section 00110.
- 3.7 **FIELD CHANGE ORDER (FCO):** A FCO may be utilized for immediate direction and authorization to proceed with Changes in the Work.
- 3.8 **JOB MEMORANDUM (JM):** A JM shall be utilized by the Engineer or OAR to communicate in writing to the Contractor either a deficiency in the Work or other action

4. INFORMATION AND SERVICES REQUIRED OF THE OWNER

- 4.1 The Owner shall furnish the Contractor with the name of the person or firm who shall be the OAR for the purpose of all communication required between the Owner and the Contractor.
- 4.2 Upon written request, the Owner shall furnish to the Contractor a legal description of the Project site, and a survey of baseline and benchmarks for the Contractor's use in laying out its Work, which such description and survey shall not constitute one of the Contract Documents. However, the Owner shall not be responsible for furnishing surveys or other information as to the physical characteristics of or utility locations for the Project site.
- 4.3 Prior to execution of the Contract Documents, the Owner made available to the Contractor, and the Contractor studied the results of, test borings and other information that the Owner has as to subsurface conditions and site geology. The Owner disclaims all responsibility whatsoever with respect to the sufficiency or accuracy of borings made, or of the logs of test borings, or of other investigations or records of subsurface conditions (including but not limited to, underground utility locations, or of the interpretations made thereof), and there is no warranty or guaranty, expressed or implied, that the conditions indicated by such borings, logs, investigations, records, or information are representative of conditions existing throughout the Work site, or any part thereof, or that unforeseen developments may not occur. At the Owner's request, the Contractor shall make available to the Owner the results of any surface or subsurface investigations of the site, test borings, analyses, studies or other tests conducted by or in possession of the Contractor or any of its agents.
- 4.4 The Owner shall secure and pay for any easements, transportation and sewer benefit fees associated with the Work. The Contractor shall secure and pay for those permits, fees and notices set forth in Subsection 9.1 in Section 001200.

- 4.5** In addition to the permit sets, the Contractor shall be furnished, free of charge, eight (8) copies of the Contract Documents which shall be obtained from the Engineer. Additional copies of such documents may be obtained at the Contractor's expense.

5. OWNER'S RIGHT TO STOP OR SUSPEND THE WORK

- 5.1** If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents or fails to carry out Work in accordance with the Contract Documents within seven (7) Days from the date of the Engineer's or Owner's written notice to the Contractor describing said failure, without limiting the Owner's other remedies set forth herein the Owner may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

The right of the Owner to stop the Work under Subsection 5.1 or 5.2 shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity. This right shall be in addition to, and not in restriction of, the Owner's rights under other Subsections.

- 5.2** The Owner shall have the authority to suspend the Work, in whole or in part, for such period of time as it may deem necessary, due to unsuitable weather or any other circumstances which, in the Owner's discretion, requires a suspension of the Work. An order by the Owner to suspend the Work shall be in writing except in cases of bona fide emergencies.

- 5.3** In the event the Work is suspended under Subsection 5.2, for reasons beyond the Contractor's control or for unforeseen circumstances not otherwise provided for in the Contract Documents which could not have reasonably been anticipated or avoided by the

Contractor, the Contractor shall be granted an appropriate extension of Contract Time as its sole compensation for the period of suspension, which in no event shall exceed the day-for-day period of suspension. The Contractor shall not be entitled to receive any increase in the Contract Time for suspensions imposed by the Owner under Subsection 5.1 or for suspensions under Subsection 5.2 which are either: (a) made at the request of the Contractor for its own convenience; (b) attributable to circumstances caused by the Contractor or those for which the Contractor is responsible; (c) attributable to circumstances which reasonably could have been anticipated or avoided by the Contractor; (d) attributable to inclement weather conditions usually experienced at the Project site during the relevant time period; or (e) attributable to circumstances otherwise anticipated in the Contract Documents

6. OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner or Engineer to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, commence and continue to carry out the Work. In such case, an appropriate Change Order or Construction Change Directive shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the OAR's and

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

Engineer 's additional services and expenses made necessary by such default, neglect or failure and all damages, costs, expenses or losses caused by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts owed to the Owner, the Contractor shall pay the difference to the Owner. The right of the Owner to carry out the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

END OF SECTION

SECTION 00 10 00

SCOPE OF WORK

- 1. INTENT OF CONTRACT.** The intent of the Contract is to include all necessary items for the proper completion of the Work by the Contractor, so the Owner may have a functioning facility which it may use as intended. The Contractor shall perform, without additional compensation, such incidental Work as necessary to complete the Work so that it will meet the requirements for which the Project was intended in a satisfactory and Workmanlike manner.

The Contractor acknowledges and declares that the Contract Documents are sufficient to enable the Contractor to complete the Work as shown in the Contract Documents or, if not specifically shown, to perform the activities which may be reasonably inferred as necessary for completion of the Work in accordance with the requisite time frame, applicable laws, statutes, building codes, regulations, or as otherwise required by the Contract Documents. The Contractor shall not take advantage of any apparent error or omission in the Contract Documents. In addition, if the Contractor performs any construction activity which the Contractor knows or should have known contains an error, inconsistency or omission, the Contractor shall be responsible for such performance and shall bear the cost for correction.

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 in the public or any member thereof rights of 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.

No acceptance, order, measurement, payment, or certificate of or by the Owner or its employees or agents shall either stop the Owner from asserting any rights or operate as a waiver of any provision hereof or of any power or right herein reserved to the Owner or of any rights to damages herein provided.

- 2. PLANS, SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.** Plans showing general outlines and details necessary for a comprehensive understanding of the Work form a part of the Contract Documents. The total number and the titles of the Drawings constituting the Plans are shown on the title sheet of the Plan Assembly. All Work under the Contract shall be performed in all respects in compliance with the requirements of the Contract Documents.

The Contract Documents provide for a complete Work and may have been prepared in divisions of various crafts, trades and other categories of Work. The Contractor is responsible for the performance of all Work under the Contract regardless of any such divisions, and shall ensure that all of the Work is performed and completed.

The Owner will provide the Contractor with one transparency copy of the Plans and three copies of the Project Manual for the Contractor's use during the execution of the Contract. The Contractor may reproduce these documents for its use during the performance of the Work under this Contract.

The Contractor shall maintain at the Site at all times at least one (1) copy of Plans, Technical Specifications and all other Contract Documents together with at least one (1) complete set of approved shop drawings and approved samples. The Contractor shall also maintain one copy of as-built Drawings marked in red with differences in actual construction from the information as shown in the Contract documents.

The Contractor shall make available at the job site one copy of each referenced standards and/or Specifications for the Contractor's and the Engineer's use during the time that Work covered by the standards and/or Specifications is underway.

3. **COORDINATION OF CONTRACT, PLANS AND SPECIFICATIONS.** The Contract, Plans, Specifications, and all referenced standards cited are essential parts of the 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 general provisions, Plans, cited standards for materials or testing, and cited FAA advisory circulars, if referenced; 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.

From time to time, discrepancies within cited standards for testing occur due to the timing of changing, editing, and replacing of standards. In the event the Contractor discovers any apparent discrepancy within standard test methods, he shall immediately call upon the Engineer for his/her interpretation and decision, and such decision shall be final.

The Contractor shall not take advantage of any apparent error, omission, discrepancy or ambiguity on the Plans or Specifications. If any error, omission, discrepancy or ambiguity is found by the Contractor in the Plans or Technical Specifications, the Contractor shall refer the same to the Engineer for its interpretation and decision and such decision shall be final.

The Engineer shall have the right to correct apparent errors or omissions in the Plans and Technical Specifications and to make interpretations as it may deem necessary for the proper fulfillment of the Contract Documents. During the course of the Work, should any conflicts, ambiguities, or discrepancies be found that are not addressed or any discrepancies between the Plans and the Technical Specifications to which the Contractor has failed to call attention before submitting the Bid, then the Engineer will interpret the intent of the Plans and Technical Specifications and the Contractor hereby agrees to abide by the Engineer's interpretation and agrees to carry out the Work in accordance with the decision of the Engineer at no additional cost to the Owner. In such event the Contractor will be deemed to have included in the Bid the most expensive material and/or method of construction.

When a material, article, or equipment is designated by a brand name, and more than one brand name is listed, it will be understood that the design is based on one of the brand named listed products. The Contractor will be responsible for all coordination necessary to accommodate the material, article or equipment actually being provided without additional cost to the Owner.

The organization of the Contract Documents into divisions, sections and articles, and the arrangement of Drawings does not restrict or limit the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

4. **PRODUCT AND REFERENCE STANDARDS.**

- 4.1 When descriptive catalog designations including manufacturer's name, product brand name, or model number are referred to in the Contract Documents, such designations shall be considered as being those found in industry publications of current issue on the date of the first Advertisement for Bids.
- 4.2 When standards of the Federal Government, including the Federal Aviation Administration, Standards Organization such as ASTM, AASHTO, AWS or ANSI, trade societies, or trade associations are referred in the Contract Documents by specific date of issue, these shall be considered a part of this Contract. When such references do not bear a date of issue, the current published edition on the date of the first Advertisement for Bids shall be considered as part of the Contract.
- 4.3 Where in the Contract Documents an item is identified by a particular manufacturer's name, model or other code it shall be interpreted to include other manufacturer's product of like and equal quality whether the words "or equal" are included or not.
- 4.4 Wherever a particular manufacturer's product is required, to the exclusion of all others, appropriate language is included in the Contract Documents.
- 4.5 Wherever the terms "as directed", "ordered", "permitted", "designated", "as approved", "approved equal", "or equal", "acceptable" and other words of similar meaning which authorize an exercise of judgment are used in the Contract Documents, such judgment shall be vested only in the Engineer and/or the Owner.

5. GENERAL CIVIL RIGHTS PROVISIONS

In all its activities within the scope of its airport program, the Contractor agrees to comply with pertinent statutes, Executive Orders, and such rules as identified in Title VI List of Pertinent Nondiscrimination Acts and Authorities to ensure that no person shall, on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

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CHANGES IN SCOPE OF WORK

1. **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, as agent for the Owner and with the Owner's approval 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 Liquidated Damages by more than 25 percent (total cost being based on the unit prices and estimated quantities in the awarded Contract). Alterations which 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 which 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.

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.

All Supplemental Agreements shall be approved by the TSA and shall include valid wage determinations of the U.S. Secretary of Labor when the amount of the Supplemental Agreement exceeds \$2,000. However, if the Contractor elects to waive the limitations on Work that increases or decreases the originally awarded Contract or any Liquidated Damages by more than 25 percent, the Supplemental Agreement shall be subject to the same, U.S. Secretary of Labor wage determination as was included in the originally awarded Contract.

All Supplemental Agreements shall require consent of the Contractor's Surety and separate Performance Bonds and Payment Bonds.

2. **OMITTED ITEMS.** The Engineer may, in the Owners best interest, omit from the Work any Contract Item, except Liquidated Damages. Liquidated Damages may be omitted by a Supplemental Agreement. Such omission of Contract Items shall not invalidate any other Contract provision or requirement.

Should a Contract Item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all Work performed toward completion of such item prior to the date of the order to omit such item. Payment for Work performed shall be in accordance with the Subsection titled Payment for Omitted Items of Section 001900.

3. **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 Change 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 001900.

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 000100.

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.

4. TYPES OF CHANGES IN WORK

- 4.1** Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order ("CO"), Construction Change Directive ("CCD"), Field Change Order ("FCO") or order for a Minor Change in the Work ("Minor Change"), subject to the limitations stated in this Subsection 4 and elsewhere in the Contract Documents.
- 4.2** A Change Order shall be based upon agreement between the Owner and Contractor. A Construction Change Directive shall be issued unilaterally by the Owner and may or may not be agreed to by the Contractor. Both a Change Order and Construction Change Directive must be approved by the Owner's Construction Committee and the Birmingham Airport Authority Board, subject to limits of approvals set forth in the Owner's Policies and Procedures. An order for a Minor Change in the Work resulting in zero-dollar change may be issued by the OAR or Engineer alone. A Field Change Order may be issued by the Owner's Senior Director of Engineering & Construction as provided in Subsection 7 of this Section.
- 4.3** Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive, Field Change Order, or order for a Minor Change in the Work.
- 4.4** If unit prices are stated in the Contractor's Bid or Proposal and are accepted by the Owner, or if they are subsequently agreed upon by the Owner and Contractor, the Owner may authorize increases or decreases in quantities of a Major Work Item without any change in the applicable unit price, provided that the aggregate change in quantity of a Major Work Item does not increase or decrease by a net amount of twenty-five percent (25%) compared to the quantities stated in the unit price schedule contained in the Contract at the time of award. If the cumulative or aggregate amount of the quantity of a Major Work Item changes (either increases or decreases) by a net amount in excess of twenty-five percent (25%), then the Owner and Contractor shall mutually agree upon an increase or decrease in the unit price. In the event the Owner and Contractor are unable to agree upon the unit price adjustment, the Owner may issue a CCD consistent with Subsection 6 or terminate the Contract with respect to the disputed items and perform the Work through separate Contractors or the Owner's own forces. A Major Work Item constitutes twenty percent (20%) or more of the Total Contract Price.
- 4.5** For all Change Orders, Construction Change Directives, and Field Change Orders, except those based upon established unit prices (if applicable), regardless of the method used to determine the adjustment of the Total Contract Price, the maximum mark-up for overhead and profit on allowable costs which the Contractor and Subcontractors or suppliers shall receive is controlled by the following table:

Value of Changes	Contractor's Mark-up on Work by Contractor's Own Forces	Contractor's Mark-up on Work Performed by Subcontractors or Suppliers	Subcontractors' or Suppliers' Mark-up on Work Performed by Own Forces
\$1 to \$25,000	10%	10%	15%
\$25,001 to \$500,000	8%	8%	8%
\$500,001 and above	6%	6%	6%

The appropriate maximum mark-up payable to Subcontractors and suppliers for Work performed by their own forces for each separate Change Order or Construction Change Directive shall be determined by the dollar value of the Work performed by a particular Subcontractor or supplier. The appropriate maximum mark-up payable to the Contractor for administration of Work performed by Subcontractors or suppliers for each separate Change Order or Construction Change Directive shall be determined by the cumulative dollar value of Work being performed by Subcontractors or suppliers, on each separate Change Order, Construction Change Directive, or Field Change Order.

The maximum mark-up for overhead and profit for Work performed by Subcontractors or suppliers will be a cumulative maximum markup over allowable costs, regardless of the number of tiers of Subcontracts or supply Contracts involved. For deductive changes, the Owner shall be entitled to a credit on the net amount of the change commensurate with the mark-up provided to the Contractor and its Subcontractors or suppliers for additive Change Orders, Construction Change Directives, or Field Change Order. There shall be no mark-up allowed for the cost of Surety Bonds. The Contractor shall be allowed reimbursement for the actual cost of Surety Bonds required by the Contract.

4.6 If the Change Order, Construction Change Directive or Field Change Order provides for an adjustment of the Total Contract Price, the amount of the adjustment shall be based upon one of the following methods which shall be selected by the Owner.

4.6.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation which data shall include, at a minimum, copies of such books and records of the Contractor and its Subcontractors to verify actual material and equipment costs, wage rates, payroll Terminations, insurance rates, actual bond premiums and any other data used by the Contractor in estimating the value of the changed Work; or

4.6.2 Unit prices stated in the Contract Documents or subsequently agreed upon; or

4.6.3 In a manner otherwise agreed upon by the Owner and the Contractor; or

4.6.4 As provided in Subsection 8 in Section 00110 ("Force Account").

5. CHANGE ORDERS

- 5.1** A Change Order is a written Contract Modification signed by the Owner and Contractor stating their agreement upon all of the following:
 - 5.1.1** A change in the Work;
 - 5.1.2** The amount of the adjustment in the Total Contract Price, if any; and
 - 5.1.3** The extent of the adjustment in the Contract Time, if any.
- 5.2** If the Change Order provides for an adjustment to the Total Contract Price, the amount of the adjustment shall be determined by one of the methods provided in Subsection 4.6.
- 5.3** Provided the Contractor executes the Change Order following approval by the Owner, as set forth in Subsection 4.2, the Owner's Senior Director of Engineering and Construction may issue a Change Order Notice to Proceed. The Change Order Notice to Proceed authorizes the Change Order Work pending the Owner's execution of the Change Order.

6. CONSTRUCTION CHANGE DIRECTIVES

- 6.1** A Construction Change Directive is a written order prepared and signed by the Owner directing a change in the Work or stating a proposed basis for adjustment, if any, in the Total Contract Price or Contract Time, or both. The Owner may, by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Total Contract Price or Contract Time being adjusted accordingly.
- 6.2** A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.
- 6.3** If the Construction Change Directive provides for an adjustment of the Total Contract Price, the amount of the adjustment shall be based on one of the methods provided in Subsection 4.6.
- 6.4** Upon receipt of a properly signed Change Directive, the Contractor shall promptly proceed with the change involved and advise the Engineer in writing of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Total Contract Price or Contract Time.
- 6.5** A Construction Change Directive signed by the Contractor indicates agreement with the adjustment in Total Contract Price and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.
- 6.6** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Total Contract Price, the method and the adjustment shall be determined by the Engineer on the basis of Force Account based upon the reasonable expenditures or savings of those performing the Work attributable to the change, including an allowance for overhead and profit as provided in Subsection 4.5. If the Owner or Engineer orders the change to proceed on Force Account, the Contractor shall keep and present at the end of each Work Day an itemized accounting together with appropriate supporting data pursuant to Subsection 8.
 - In no event shall the charge or credit to the Owner exceed the allowable charges set forth in Subsection 8.

- 6.7** Pending final determination of cost to the Owner, amounts not in dispute may be included in Applications for Payment. The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Total Contract Price shall be calculated in the same manner as the Contractor calculates an additive change as provided in Subsection 4.5 and 4.6. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.
- 6.8** If the Contractor and Owner are unable to agree on the increase or decrease in the Total Contract Price, or in the Contract Time, the Owner may order the Contractor to proceed with the Work on the basis of the Construction Change Directive and the Contractor shall proceed with the Work when so ordered. The Owner may choose to approve payments to the Contractor for reasonable costs and adjust the Contract Time for Work performed by the Contractor on the basis of the Construction Change Directive, in any manner which the Owner deems appropriate, pending final resolution of the changes in Total Contract Price and Contract Time. Any payments or adjustment hereunder, made in the Owner's discretion, shall not constitute an admission by the Owner of liability for those payments or adjustment and shall not constitute a waiver of any of the Owner's rights under the Contract Documents.
- 6.9** The Contractor, on behalf of itself and its Subcontractors and suppliers, represents that all allowable costs furnished by the Contractor to the Owner in response to any Change Order Request, Construction Change Directive, or Field Change Order, shall be fair, reasonable, accurate, complete and current at the time of submission. In addition to any other rights and remedies provided to the Owner by the Contract Documents, the Owner shall have the right to adjust the Total Contract Price to (1) exclude any amounts by which the Owner determines one or more Change Order, Construction Change Directives, or Field Change Orders were increased due to inaccurate, misleading or non-current allowable costs, including material or equipment costs, wage rates, payroll taxes, insurance rates, actual bond premiums or other factual unit costs, and (2) recover interest on all excess amounts paid to the Contractor at the rate of six percent (6%) per annum. The Contractor and its Subcontractors shall be required to include these provisions in any Subcontracts entered into for this Project.

7. FIELD CHANGE ORDERS AND MINOR CHANGES IN THE WORK

- 7.1** A Field Change Order may be issued in an amount not to exceed \$25,000, and shall be executed by the Owner's Senior Director of Engineering & Construction, authorizing the Contractor to proceed with the changed Work immediately. Field Change Orders shall be incorporated into the Contract by appropriate Change Order or Construction Change Directive.
- 7.2** The Engineer will have authority to order Minor Changes in the Work not involving adjustment in the Total Contract Price or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.
- 7.3** If the Field Change Order provides for an adjustment of the Total Contract Price, the amount of the adjustment shall be based on one of the methods provided in Subsection 4.6.

8. FORCE ACCOUNT WORK

- 8.1** Force Account Work shall be documented, consistent with the procedures of Subsection 6, and verified jointly by the Contractor and the Engineer.

The Contractor bears the responsibility for obtaining daily approval of all allowable Force Account charges described below. The Contractor shall not be paid for Claims arising from unapproved time charges. The Contractor shall provide any documentation requested by the OAR including but not limited to:

- 8.1.1** Time sheets which shall be approved daily by the Engineer (or authorized site representative, designated for this purpose) for the actual hours spent by manpower and equipment listed.
- 8.1.2** Substantiation for net direct cost of the Contractor's labor and foremen while directly performing the Force Account Work activity, but excluding any costs associated with any of the Contractor's Superintendents, Project Engineer and Engineers, or Project managers, which Contractor acknowledges are compensated in Subsection 8.1.6. Required records shall include certified payroll records, as well as timesheets, summarizing all pertinent information for recoverable labor costs, increased by the Contractor's actual documented cost to cover all allowable benefits and expenses.
- 8.1.3** Major Equipment Cost Information (net of mark-ups as provided in Subsection 4.5) that substantiates the rental cost of rented equipment or Contractor-owned equipment. The Contractor shall use the criteria set forth below:
 - (a) Originals or certified copies of Rental Invoices are to be submitted to the OAR. Contractor- owned equipment rates and rental rates shall not be more than fifty percent (50%) of the properly adjusted rates indicated in the most recent Rental Rate Blue Book by Dataquest Inc. ("Blue Book"), applicable to the date the Force Account Work activity was performed, for the period of actual use of such equipment;
 - (b) No charges shall be made for the use of hand tools and other small equipment normally available at the site nor for highway vehicles normally assigned to the Project site;
 - (c) Rates for equipment and vehicles owned by the Contractor or Subcontractor and specifically assigned to the Force Account Work activity shall be established according to Subsections (a) above;
 - (d) Maximum rates for equipment not listed in the Blue Book shall be established by capacity comparisons to other listed equipment;
 - (e) No overtime charges shall be made for equipment operating longer than 8 hours per Day and only daily or prorated weekly or monthly rates per Day shall be allowed depending on the actual rental period;
 - (f) Contractor-owned equipment daily rates shall be based on 1/30th of the monthly rates, and hourly rates (not to exceed a total of 8 hours per Day) shall be based on 1/240th of the monthly rate;
 - (g) No payment will be made for repairs or repair down time;
 - (h) Operating costs, if not included in the Blue Book rates, shall be no greater than 15% of the rental rate for actual operating hours;
 - (i) In no event shall the Contractor be entitled to payment for idle or standby equipment.
- 8.1.4** Substantiation for net costs of materials based upon invoices for materials invoices should correspond to take-off quantities of materials. Certified invoices, prorated to these actual take-offs, including freight to site, if not transported by trucks paid for otherwise, plus applicable sales tax, shall constitute the only reimbursable materials expenses. Material prices shall be consistent with or under values established by industry guides recording the lowest prices for Alabama.

- 8.1.5** Substantiation for net cost of Subcontracts provided that the cost of the Subcontract is determined in a manner consistent with this Subsection 8.1 so as to limit specific items of cost to those so identified.
- 8.1.6** Substantiation for appropriate mark-up percentages not to exceed those listed in Subsection 4.5 to cover overhead and profit of the Contractor and its Subcontractors.
- 8.1.7** Substantiation for final calculations. Within seven (7) Days of the completion of the Force Account Work activity, the Contractor shall compile a packet of information containing all backup documentation for accrued charges and submit all documentation not previously provided to the Engineer with a request for reimbursement of the cost plus Contractor's mark-up for overhead and profit as determined in accordance with Subsection 4.5.
- 8.2** The Contractor specifically agrees that no other Claims shall be asserted against the Owner for such Force Account Work except as provided under this Subsection 8.
- 8.3** Upon verification of the total charges the OAR will prepare a Change Order for this Force Account Work in the manner described under Subsection 5.
- 8.4** The term "net" as used herein refers to costs exclusive of the mark-up percentages referenced in Subsection 8.1.6.

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CONTROL OF WORK

- 1. AUTHORITY OF THE ENGINEER.** The Engineer will administer the Contract and the orders of the Owner are to be given through 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 which may arise as to the interpretation of the Specifications or Plans relating to the Work, the fulfillment of the Contract on the part of the Contractor, and the rights of different contractors on the Project. The Engineer shall determine the amount and quality of the several kinds of Work performed and materials furnished which are to be paid for under the Contract.

The Engineer is not authorized to revoke, alter, or waive any requirement of the Contract.

Where the Contract Documents provide for decisions or other actions by the Engineer, the same shall be final and binding upon the Contractor.

The Engineer shall have free access to the Work and materials at all times to facilitate the performance of its administrative and other duties including access to any portion of the Work that may be performed off-site.

The Engineer is authorized and shall have the right to reject any material or Work performed which does not conform to the requirements of the Contract Documents. When the Engineer discovers any Work in progress that does not meet the requirements of the Contract Documents, the Engineer shall reject that portion of the Work affected and shall confirm such rejection in writing, as soon as practical, detailing the reasons for the rejection. Work rejected by the Engineer will not be paid for. Whenever the Engineer considers it necessary or advisable the Engineer is authorized to require additional inspection, examination or testing of the Work regardless of the stage of completion or delivery of the Work. However, neither this authority of the Engineer, nor a decision made in good faith, either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Engineer to the Contractor, subcontractor, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

The Engineer shall be responsible for inspection or examination of portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work. The Engineer shall keep full detailed written records of all inspection or examination efforts. These written records shall include dates, subject matter, persons present, results of inspections or examinations and shall be made available to the Owner, if requested.

The fact that the Engineer has not made early discovery of material furnished or Work performed which does not meet the requirements of the Contract Documents, shall not bar the Engineer from subsequently rejecting said material or Work.

The administration, observation of the Work and actions taken by the Engineer as herein provided, shall not be construed as undertaking approval of means and methods employed by the Contractor or its Subcontractors and shall not relieve the Contractor from any of its responsibilities or obligations under the Contract. The Contractor shall not request or attempt to require the Engineer to undertake such supervisory control or to administer, to supervise, to inspect, to assist, or to act in any manner so as to relieve the Contractor from such responsibilities or obligations.

2. ROLE OF CONTRACTOR; REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS

- 2.1** The Contractor acknowledges and declares that the Contract Documents are sufficient to enable the Contractor to complete the Work as shown in the Contract Documents or, if not specifically shown to perform the activities which may be reasonably inferred as necessary for completion of the Work in accordance with the requisite time frame, applicable laws, statutes, building codes, regulations, or as otherwise required by the Contract Documents. The Contractor shall not take advantage of any apparent error or omission in the Contract Documents. In addition, if the Contractor performs any construction activity which the Contractor knows or should have known contains an error, inconsistency or omission, the Contractor shall be responsible for such performance and shall bear the cost for correction.
- 2.2** The Contractor shall take field measurements, verify field conditions and carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be immediately reported in writing to the Engineer and OAR.
- 2.3** The Contractor represents that it is familiar with the Project site and has received all information it needs concerning the conditions of the Project site. The Contractor represents that it has inspected the location of the Work and has satisfied itself as to the location and condition thereof, including, without limitation, the location and condition of all structures, utilities, and surface and subsurface conditions. At no additional cost to the Owner, the Contractor shall undertake all further investigations and studies as may be necessary or useful to determine the location and condition of structures, utilities, surface and subsurface conditions. Based upon the foregoing inspections, understandings, agreements and acknowledgments, the Contractor agrees and acknowledges: (i) that the Total Contract Price is just and reasonable compensation for all the Work, including all reasonably foreseen and foreseeable risks, hazards, and difficulties in connection therewith; (ii) that the Contract Time is adequate for the performance of the Work; and (iii) that the Work shall not result in any unintended lateral or vertical movement of any Structure. The Contractor shall have no Claims for surface or subsurface conditions except as described in Section 00290. The Contractor shall exercise special care in executing Work in proximity of known utilities, improvements, and easements.

3. SUPERVISION AND CONSTRUCTION PROCEDURES

- 3.1** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract including coordination of the duties of all trades, unless the Contract Documents give other specific instructions concerning these matters.
- 3.2** The Contractor shall control its operations and those of its Subcontractors and Suppliers to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

- 3.3 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and any other persons or entities performing portions of the Work for, or on behalf of the Contractor or any of its Subcontractors.
- 3.4 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Engineer or OAR in their administration of the Contract, or by tests, inspections, reviews or approvals required or performed by persons other than the Contractor.
- 3.5 If any of the Work is required to be inspected or approved, the Contractor shall cause such inspection or approval to be performed. No test, inspection or examination performed or failed to be performed by the Owner hereunder, shall be a waiver of the right to enforce any of the Contractor's obligations hereunder.
- 3.6 The Contractor is fully responsible to provide a sufficient number of skilled Workers, supervision, and project management personnel, to prosecute the Work and insure that the Work is completed within the Contract Time. Failure to fully staff the Project with skilled Workers, supervision, or project management personnel shall be cause for termination of the Contract in accordance with Section 001800 of this Contract or such other remedies set forth in the Contract Documents. The Contractor assumes all risks of delays or extra costs which may be associated with labor disputes involving the Contractor, its Subcontractors or Suppliers and in no event shall the Contractor be entitled to additional compensation or an extension of Contract Time due to any such dispute.
- 3.7 When any portion of the Work is to be performed away from the site, the Contractor shall provide reasonable advance notice to the Engineer as to where and when such Work is to be done, and shall make arrangements for access thereto by the Engineer in order that same may be inspected by the Engineer.
4. **LIMITATION OF OPERATIONS.** The Contractor shall control its operations and the operations of its Subcontractors and all suppliers so as to provide for the free and unobstructed movement of aircraft in the Air Operations Areas (AOA) of the Airport.

When the Work requires the Contractor to conduct its operations within an AOA of the Airport, the Work shall be coordinated with Airport Operations (through the Engineer) at least 72 hours prior to commencement of such Work. The Contractor shall not close an AOA 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 Sections 002000 002030.

When the Contract Work requires the Contractor to Work within an AOA of the Airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications with the Engineer and Airport Operations; immediately obey all instructions to vacate the AOA; immediately obey all instructions to resume Work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until the Engineer is provided with evidence that the Contractor will comply with such requirements. The following AOA cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations only intermittently:

NONE

Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction, current edition.

5. **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 Documents, 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 which 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 in the manner and time required by the Contract Documents, Plans and Specifications. The Contractor shall assure that use of equipment on any portion of the Work shall not result in injury or damage to previously completed Work, adjacent property or existing Airport facilities.

The Contractor shall be solely responsible for and have control over all of the construction means, methods, techniques, sequences, processors and procedures and for coordinating portions of the Work under the Contract Documents unless the Contract Documents give specific instructions concerning these matters.

When the Contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless others are 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.

6. LABOR, SERVICES AND MATERIALS

- 6.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, services, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.
- 6.2** The Contractor shall enforce strict discipline and good order among the Contractor's employees, Subcontractors, and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.
- 6.3** For federally funded Projects, refer to Section 002500 for requirements concerning payroll records and reporting requirements.
- 6.4.** Refer to General Decision Number AL 20220087 02/25/2022 by the State of Alabama for Wage Rate Determination:

Superseded General Decision Number: AL20210087

State: Alabama

Construction Type: Building

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories)

County: Jefferson County in Alabama.

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

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

7. **WARRANTY.** The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly authorized by the Owner, may be considered defective. If required by the OAR or Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment provided in the Work. Additional provisions addressing the Contractor's liability for defective Work include, but are not limited to, Section 001200. Warranties required by the Contract Documents shall commence on the Date of Final Acceptance, unless provided otherwise in the Contract Documents. Delivery of the Contractor's written warranty documents is a requirement for release of Final Payment by the Owner as provided in Subsection 42 of this Section 001200.
8. **TAXES.** To the extent the Contractor fails to comply with the tax exempt provisions of Section 00230 of this Contract, the Contractor, at its expense, shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor for which the Contractor is charged.

CERTIFICATION OF OFFEROR/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

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

Certifications

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

Note

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

Term Definitions

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

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

9. PERMITS, FEES AND NOTICES

- 9.1** The Contractor shall secure and pay for the building permit and other permits and governmental fees for licenses and inspections necessary for proper execution and completion of the Work which are customarily secured for performance of the Work, including, but not limited to, any applicable building, engineering, dewatering, NPDES stormwater management or other construction permits required to complete the Work. The Contractor shall be responsible for any submissions and approvals to the applicable governmental authority, including, without limitation, all pre-construction approval or any plans, drawings or site plans for the Work, and the payment of any fees therefor. The Contractor shall procure all certificates of inspection, use, occupancy, permits and licenses, and give all notices necessary and incidental to the due and lawful prosecution of the Work, including, without limitation, all required notices and approvals from FAA. Certificates of inspection, use and occupancy shall be delivered to the Owner upon completion of the Work in sufficient time for occupancy of the Project in accordance with the schedule for the Work. The costs of such procurement, payment and delivery are included within the Total Contract Price.
- 9.2** The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities and the FAA bearing on performance of the Work.
- 9.3** It shall be the obligation of the Contractor to review the Contract Documents to determine and to notify the Owner and Engineer of any discrepancy between building codes and regulations of which the Contractor has knowledge or should be reasonably able to determine. The Contractor shall not violate any zoning, setback or other locational requirements of applicable laws, codes or ordinances, or of any recorded covenants of which the Contractor has knowledge. If the Contractor observes that portions of the Contract Documents are at variance with applicable laws, statutes, ordinances, building codes, rules or regulations, the Contractor shall promptly notify the Owner and Engineer in writing, and necessary changes shall be accomplished by appropriate Contract Modification after approval by the Owner.
- 9.4** If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Engineer and Owner, the Contractor shall assume full responsibility for correction of such Work and shall bear the attributable costs.

10. CONTRACTOR'S KEY PERSONNEL

- 10.1** The Contractor shall employ a competent Project Manager and Superintendent during the performance of the Work. The Contractor's Superintendent shall be on the site at all times during the performance of the Work. The Project Manager shall represent the Contractor, and communications given to the Project Manager shall be binding on the Contractor. Important communications shall be confirmed in writing. The Owner shall have the right but not an obligation to require the Contractor to dismiss from the Project any or all of the Contractor's Project personnel whose performance is not satisfactory to the Owner, and, in such event, the Contractor shall replace such personnel with personnel satisfactory to the Owner.

- 10.2** The resumes of the Contractor's key personnel that the Contractor intends to use on the Project, including but not limited to the Project Manager and Superintendent, and a chain- of-command organizational chart shall be submitted to the Engineer prior to the commencement of Work.

11. DOCUMENTS AND SAMPLES AT THE SITE -- AS-BUILT DOCUMENTS (DRAWINGS AND SPECIFICATIONS)

- 11.1** The Contractor shall maintain at the site all approved shop drawings, product data, samples and other required Submittals and make such documents available for use by the Owner and Engineer.
- 11.2** The Contractor shall maintain at the site for the Owner and Engineer As-Built Documents comprised of one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to accurately reflect all as-built conditions, including, but not limited to, all locations of utilities as actually installed, all changes to the Work required by Contract Modifications or material selections made during the construction period. These As-Built Documents shall be available to the Owner and Engineer throughout the construction period. All As-Built Documents shall be delivered to the OAR for review and acceptance by the Engineer upon completion of the Work, signed by the Contractor to certify that they show complete and exact as-built conditions, stating dimensions, sizes, kinds of materials, and similar matters (including, but not limited to, piping and conduit locations). The Contractor shall be held responsible for all damages arising directly or indirectly out of the Contractor's failure to maintain and provide to the Owner complete and accurate As-Built Documents and other information.

12. SUBMITTALS: SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- 12.1** Shop drawings are Drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work
- 12.2** The Contractor shall maintain at the site all approved permit Drawings in a manner so as to make them accessible to governmental Inspectors and other authorized agencies. All approved Drawings shall be wrapped, marked and delivered to the Engineer within the timeframe provided in the Specifications; if no timeframe is so provided, then within the timeframe established by the Engineer.
- 12.3** Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
- 12.4** Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.
- 12.5** Shop drawings, product data, samples and similar Submittals (all of which shall be referred to as "Submittals") are not changes to the Contract Documents, unless incorporated by a Contract Modification. The purpose of Submittals is to demonstrate for those portions of the Work for which Submittals are required, the manner in which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Engineer is subject to the limitations of Subsection 12 in this Section and Subsection 1.5 in Section 00090.

- 12.6** Unless the Specifications provide otherwise, the Contractor shall review, approve and submit for review by the Engineer Submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate Contractors. The Contractor shall furnish a sufficient number of Submittals to enable the Owner and OAR to retain four (4) copies.
- 12.7** The Contractor shall perform no portion of the Work nor purchase any materials requiring review of Submittals until the relevant Submittal has been reviewed and noted by the Engineer. All Work shall be performed in accordance with Submittals which have been reviewed. If the Contractor proposes to deviate from the requirements of the Contract Documents, the Contractor shall separately submit, and identify prominently on the transmittal cover sheet(s) for the Submittal, all proposed deviations from the requirements of the Contract Documents. The Contractor's transmittal cover sheet(s) shall direct, in writing, the Engineer's attention to the specific proposed deviations, and the Submittal shall contain all required data and supporting documentation necessary for the Engineer's evaluation of the proposed deviation. The Engineer shall evaluate the proposed deviation and submit a written recommendation to the OAR. Any Submittal containing deviations not identified as previously described shall be deemed rejected and require resubmission. When requesting a deviation, the Contractor shall also make the representations contained in Subsection 13 hereof. The Contractor's request for a deviation shall not entitle the Contractor to a time extension; however, the Owner may adjust the Contract Time at its sole discretion.
- 12.8** By approving and submitting Shop Drawings, Product Data, Samples and similar Submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, and has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents.
- 12.9** The Contractor shall not be relieved of responsibility for deviations or from requirements of the Contract Documents by the Engineer's review of Submittals unless the Contractor has complied with Subsection 13 hereof at the time of submission and the Contractor has received written authorization for the specific deviation.
- 12.10** The Contractor shall direct specific attention, in writing, to revisions on resubmitted Submittals, other than those requested by the Engineer on previous Submittals.
- 12.11** Informational Submittals upon which the Engineer and Contractor are not expected to take responsive action may be so identified in the Contract Documents.
- 12.12** When the Contract Documents require the Contractor to submit professional certification of performance capabilities of materials, connections, assemblies, systems, equipment, or other aspects of the Work, the Engineer and Owner shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.
- 13. SUBSTITUTION.** For convenience in designation on the Contract Documents, certain materials, articles, or equipment may be designated by a brand or a trade name or the name of the manufacturer, together with catalog designation or other identifying information. When Contract Documents specifically disallow substitution, the specified product shall be provided. Alternative material, article, or equipment which is of equal quality and of the required characteristics for the purpose intended may be proposed for use. The Contractor shall submit a substitution request within 45 Calendar Days from the Notice to Proceed or sooner as required by the job progress, in order not to impair the Project schedule.

No request for substitution will be considered unless accompanied by complete information and descriptive data necessary to determine the quality of the proposed materials, articles or equipment. Samples shall be provided when requested by the Engineer. The burden of proof as to the comparative quality or suitability of the proposed materials, articles, or equipment shall be upon the Contractor. The Engineer and the Owner's decision in such matters shall be final. In the event that the Engineer rejects the use of such substitute materials, articles, or equipment, then one of the particular products designated by brand name shall be provided.

The Engineer will examine and review the Substitution request with the Owner and return it, within 21 Calendar Days from the date of its receipt at the Engineer's office, to the Contractor noted with the final decision. When requested by the Engineer, the Contractor shall resubmit such shop drawings, descriptive data and samples as may be required.

If any mechanical, electrical, structural, or other changes are required for the proper installation and fit of alternative materials, articles, or equipment, or because of deviations from the Contract Documents such changes shall be shown in the substitution request and such changes shall be made without additional cost to the Owner.

Acceptance on another Project, by the Owner, of a product other than that specified for this Project does not constitute evidence of its equality with the product specified, nor its suitability for this Project.

By making a request for such a substitution, the Contractor agrees to the following:

- 13.1 That it has personally investigated the proposed substitution and determined that the proposed substitution is equal to or superior in all respects to the specified materials, method, or equipment;
- 13.2 That it will provide a warranty for the substitution identical in all respects to the warranty for the specified materials, method, or equipment;
- 13.3 That the cost data presented is complete and includes all related, incidental and consequential costs;
- 13.4 To waive all Claims for any additional costs related to the substitution; and
- 13.5 That it will coordinate the installation of the accepted substitute, making changes as may be required for the Work to be complete in all respects, at no additional cost to the Owner, nor additional time to perform the Work.

- 14. **REIMBURSEMENT OF OWNER EXPENSE.** When shop drawings, product data or physical samples are returned to the Contractor stamped REJECTED, NOT APPROVED, RETURNED FOR CORRECTIONS or otherwise not accepted through no fault of the Engineer, the Contractor shall reimburse the Owner for its additional expenses incurred as a result of the Contractor's failure to comply with Submittal requirements up to a maximum of:

Drawing Sheets	\$400.00/Drawing Sheet
Product Data	\$100.00/Cut Sheet
Physical Samples	\$200.00/Sample

Such sums shall be paid in mitigation of damages suffered by the Owner as a result of the Contractor's deficient performance, the actual amount of which cannot be accurately determined as of the time this Contract is awarded, and not as a penalty. The foregoing amounts shall be **withheld (cumulatively) from the Contractor's Application for Payment each month, as applicable**. At or before the Final Completion, a deductive Contract Modification shall be issued to the Contractor by the Owner to reflect all such deductions.

15. **USE OF SITE AND COORDINATION.** The Contractor shall confine operations at the site to the limits of construction shown on the Drawings and shall not unreasonably encumber the site with materials or equipment. The Contractor shall not dispose of debris or waste material on the Owner's property without the prior approval of Owner. Hazardous materials shall be disposed of pursuant to applicable state and federal statutes. At no additional cost to the Owner, the Contractor shall take all actions necessary to coordinate the Contractor's Work with other activities at the site of the Work, the on-going operations of the Owner, and users of the Owner's facilities.

16. **CUTTING AND PATCHING**

- 16.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.
- 16.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

17. **CLEANING UP**

- 17.1 The Contractor, on a daily basis, shall keep the premises and surrounding area free from the accumulation of waste materials or rubbish caused by operations under the Contract. At the completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials caused by operations under the Contract. The Contractor shall not dispose of debris or waste material on the Owner's property or in waste containers (dumpsters) leased by the Owner without prior approval of the Owner.
- 17.2 If the Contractor fails to keep the site clean as provided in the Contract Documents, then, following the Owner's written notice to the Contractor, pursuant to Subsection 5 in Section 000900, the Owner may take appropriate action to clean the site and charge such costs to the Contractor.

18. **ACCESS TO WORK.** The Contractor shall, at no additional cost, provide the Owner, OAR and Engineer access to the Work during preparation activities and while the Work is in progress, subject to the safety rules and insurance requirements of the particular Work area. This access shall include the Contractor's providing reasonable assistance; for example, providing ladders, equipment and workers to remove/replace heavy objects.

- 19. ROYALTIES AND PATENTS.** The Contractor shall pay all royalties and license fees due in connection with the prosecution of the Work, if any. The Contractor shall defend suits or Claims for infringement of patent rights and shall hold the Owner and Engineer harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Owner and the Engineer.

- 20. OBSERVATION OF THE WORK.** All materials and each part or detail of the Work shall be subject to observation 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.

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 Contract Documents. 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 no additional cost to the Owner and in accordance with the provisions of Section 00160 of this Contract.

Any Work done or materials used without observation by Engineer or Resident Project Representative (RPR) be ordered removed and replaced at the Contractor's expense unless the Engineer or RPR failed to observe the Work after having been given reasonable notice in writing.

- 21. MAINTENANCE OF AIRPORT OPERATIONS.** The Contractor shall control its operations and the operations of its Subcontractors and suppliers so as not to compromise the Airport's security, interfere with Airport operations or with aircraft, vehicular or pedestrian traffic, except as may be provided for in the Contract Documents.

The Contract is explicitly intended to provide for the maximum degree of safety to aircraft, the general public, Airport personnel and equipment and associated facilities, and to the Contractor's personnel, equipment and suppliers, etc., but shall also provide for the minimum interference to the free and unobstructed movement of vehicles and/or personnel engaged in the day to day operation of the Airport and the general public. To this end the Contractor, its Subcontractors and suppliers shall observe all Airport rules and regulations, all other operational limitations which may be imposed from time to time by the Owner and shall provide whatever markings, lighting and/or various types of barricades or other measures which are required to properly identify Contractor personnel, equipment, vehicles, storage areas and any Contractor's Work areas or conditions which may be hazardous to the uninterrupted operation of aircraft, Airport equipment, including but not limited to maintenance vehicles and fire rescue vehicles, other vehicles, or personnel or vehicles from any source operating on the Airport. In order to provide the maximum degree of safety on Airports during construction, the Contractor shall comply with the provisions of FAA Advisory Circular AC 150/5370-2, current edition.

The Contractor shall protect, and shall not interfere with, the operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and within the AOA of the Airport.

When the Work requires the Contractor to Work within the AOA, the Contractor shall coordinate its Work with the Owner (through the Engineer) at least 48 hours prior to the commencement of such Work. The Contractor shall not close an AOA until so authorized by the Engineer and until all necessary temporary markings and associated Lighting are in place, as specified hereinafter.

When the Work requires the Contractor to Work within the AOA on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications with the Engineer and Owner, immediately obey all instructions to vacate the AOA, immediately obey all instructions to resume Work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations within the AOA until the satisfactory conditions are provided.

When the Contract requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance of Work, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance of traffic as may be required to accommodate traffic. The Contractor shall furnish, erect, and maintain barricades, warning signs, flaggers, and other traffic control devices (to protect the public and the Work) in reasonable conformity with the Manual of Uniform Traffic Control Devices for Streets and Highways (MUTCD), current edition, published by the Department of Transportation. When used during periods of darkness, such barricades, warning signs, and hazard markings shall be suitably illuminated.

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, Marking Paved Areas of Airports, current edition.

The Contractor shall furnish, erect, and maintain markings and associated Lighting of open trenches, excavations, temporary stockpiles, and its 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 Activity, current edition. The Contractor shall identify each motorized vehicle or piece of construction in reasonable conformance to AC 150/5370-2, current edition.

The Contractor shall furnish and erect all barricades, warning signs, and markings for hazards prior to commencing Work which 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 are not permitted.

If the Contractor fails to maintain the markings, Lighting and barricades as required above, the Owner shall cause such safety measures to be installed by others. The cost for such service by others in this regard shall be borne by the Contractor.

The Contractor's responsibility for maintenance of traffic shall begin on the day the Contractor starts Work on the Project, or on the effective date of the Notice to Proceed, whichever comes first.

- 22. TEMPORARY UTILITIES, DRAINAGE, ETC.** Any temporary utilities, drainage, etc., which may be required to maintain operations of the Owner's facilities, other affected facilities, or the Work in progress during the construction period, shall be furnished, installed and maintained by the Contractor. No such utilities, drainage, etc., shall be installed or operated without the prior approval of the Engineer and the Owner. At the completion of the Work, all temporary utilities, drainage, etc., shall be removed.

All fees, charges and costs for labor and materials, including the furnishing of temporary equipment and connection(s) thereof, required for the maintenance of temporary utility services in lieu of or in addition to existing utilities services disrupted by the Work shall be furnished by the Contractor at its sole expense, except where otherwise specified. When such temporary services are no longer required, the Contractor shall remove all temporary equipment and connections and leave the facilities and existing permanent apparatus in as good condition as existed prior to making such temporary connections.

The Contractor shall furnish temporary heat or air-conditioning wherever required to prevent injury to Work and materials as a result of water, moisture, dampness, cold or any other weather or climate related condition. Use of open salamanders or any temporary heating devices which may be fire hazards or may cause smoke damage to finished Work will not be permitted. Minimum and

maximum temperature requirements specified for various materials shall be strictly observed by the Contractor.

- 23. EXISTING UTILITIES AND STRUCTURES.** Without limiting Subsection 2.3 of this Section 00120, it is the Contractor's sole responsibility to know and fully understand the location of all structures, utilities (above and below ground), and surface and subsurface conditions at the site and the Contractor shall be solely responsible for all damages, costs, expenses or losses caused to existing utilities during the performance of the Work and, without limiting the foregoing, any and all costs, expenses or losses caused by the interruption of any utility service caused by the Contractor (except as otherwise permitted herein). The Contractor shall not purposefully disrupt or disconnect any type of utility whatsoever without first obtaining the written permission of the Engineer and the Owner. If a suitable bypass of such utility cannot be provided, then the Engineer may direct the Contractor to proceed with the Work on a 24-hour per day basis until such interrupted utility services are completely restored. Requests for disconnection shall be submitted to the Engineer for processing and approval at least five (5) Working Days prior to the time of the requested interruption, and shall state:

- A. The identity of the utility involved.
- B. Justification of the requested disconnect.
- C. The location of the required disconnect.
- D. The exact data and time at which the disconnect is requested.
- E. The duration of the proposed disconnect.

The Contractor shall take all necessary precautions when using steel treaded equipment or vehicles to protect the Pavement surface from damage. Rubber tires or treads shall be used whenever possible. Any damage to Pavement caused by Contractor's or Subcontractor's equipment or vehicles shall be repaired by the Contractor in a manner acceptable to the Engineer, at no additional cost to the Owner.

The Contractor shall provide protective shoring and sheet piling, as required, at all existing structures, etc., where they may be affected by installation of new Work.

During the construction of new structures, and other foundation Work, conflicts may occur with existing underground utilities or structures. The Contractor shall call these conflicts to the attention of the Engineer, in writing immediately. The Engineer will issue instructions regarding a solution to the conflict. The Contractor shall be responsible for all methods, means, materials, and processes necessary to protect all existing facilities, property, structures, equipment or finishes damaged in any manner through its negligence during execution of the Work.

In the event of damage to existing facilities or structures, proposed to remain, relocated or otherwise reused by the Owner as a result of the Contractor's operations, the Contractor shall take immediate steps to repair or replace all damage and to restore all services. Further, the Contractor shall, when directed by the Engineer, engage any additional outside services which may be necessary to prosecute repairs on a continuous "around the clock" until facilities or structures are restored. All costs involved in making repairs and restoring disrupted service resulting from the Contractor's Work shall be borne by the Contractor and the Contractor shall be fully responsible for any and all Claims resulting from the damage.

The Contractor shall make its 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. Unless otherwise specified in the Contract Documents, the Contractor shall provide all utility services (e.g. telephone, power, lighting, water, sewer), necessary for the performance of its Work, in accordance with the requirements of the Contract Documents.

- 24. 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.

- 25. 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, it may at its option either:

- 25.1** 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,
- 25.2** Remove such material from the site, upon written approval of the Engineer; or
- 25.3** Use such material for its own temporary construction on site; or,
- 25.4** Use such material as intended by the terms of the Contract.

Should the Contractor wish to exercise option 25.1, 25.2, or 25.3, it shall request the Engineer's approval in advance of such use.

Should the Engineer approve the Contractor's request to exercise option 25.1, 25.2, or 25.3, the Contractor shall be paid for the excavation or removal of such material at the applicable Contract price. The Contractor shall replace, at its 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 its use of such material so used in the Work or removed from the site.

Should the Engineer approve the Contractor's exercise of option 25.1, 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 its exercise of option 25.1, 25.2, or 25.3.

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.

- 26. CONFORMITY WITH PLANS AND SPECIFICATIONS.** The entire Work and each part thereof shall be constructed at the location, elevation, grade and gradient specified, and in proper alignment and adjustment. The Contractor shall provide all frames, forms, falsework, shoring, guides, anchors and temporary structures required to ensure these results.

No deviation from the approved Plans, Specifications and other Contract Documents shall be permitted without the prior written approval of the Engineer, which approved deviation(s) shall be documented to the extent required by the Contract Documents.

If the Engineer finds the materials furnished, Work performed, or the finished product not within conformity with the Plans and Specifications but that the portion of the Work affected will, in the Engineer's opinion, result in a finished product having a level of safety, economy, durability, and Workmanship acceptable to the Owner, the Engineer will advise the Owner of its determination that the affected Work be accepted and remain in place. In this event, the Engineer will document its determination and recommend to the Owner a basis of acceptance which 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 professional judgment and such tests or retests of the affected Work as are, in the Engineer's opinion, needed. Changes in the Contract price shall be covered by Contract Modifications as applicable.

If the Engineer finds the materials furnished, Work performed, or the finished product are not in 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.

27. **COOPERATION OF CONTRACTOR.** The Contractor will be supplied with two copies each of the Plans and Specifications. It 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.

The Contractor shall give constant attention to the Work to facilitate the progress thereof, and shall cooperate with the Engineer and its Inspectors and with other contractors in every way possible. The Engineer shall allocate the Work and designate the sequence of construction in case of controversy between contractors. The Contractor shall have a competent Superintendent on the Work at all times who is fully authorized as its 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 its authorized representative.

28. **CONSTRUCTION LAYOUT AND STAKES.** The Contractor must establish all layout required for the construction of the Work. Such stakes and markings as the Engineer may set for either its own or the Contractor's guidance shall be preserved by the Contractor. In case of negligence on the part of the Contractor, or its 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.

29. **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.

30. **AUTHORITY AND DUTIES OF INSPECTORS.** Inspectors employed by the Owner or Engineer 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 or Engineer are authorized to notify the Contractor or its 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 its decision.

31. **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.

Any Work done or materials used without supervision or inspection by an authorized representative of the Owner or the Engineer may be ordered removed and replaced at the Contractor's expense unless the Engineer or 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 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.

- 32. OTHER AUTHORIZED INSPECTION.** The Owner, the Consulting Engineers, the General Consultants, the Lessee(s) and other agencies having jurisdiction over the Work hereunder shall be afforded free access to the site to perform such inspections and tests as may be required to determine conformance of the Work with the Contract Documents.

For AIP Projects, the Work may be subject to inspection and approval by the FAA.

- 33. 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 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. 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 its hauling equipment and shall correct such damage at its own expense.

- 34. 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 sub-grade previously constructed, the Contractor shall maintain the previous course or sub-grade 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.

- 35. 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 urgency 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 maintenance condition, depending on the urgency that exists. Any maintenance cost incurred by the Owner, shall be deducted from monies due or to become due the Contractor.

- 36. 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. Contractor shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of such property owner.

37. PARTIAL ACCEPTANCE; PARTIAL OCCUPANCY OR USE

- 37.1** 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, it 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, the Engineer 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.
- 37.2** The Owner may occupy or use any completed or partially completed portion of the Work at any stage and, if the Owner chooses such partial occupancy, the Contractor and Owner shall designate by an agreement the conditions of such partial occupancy, provided such occupancy or use is consented to by the Owner's insurer as required under Subsection 3.5 of Section 002800 (Insurance and Bond Requirements; Indemnification) and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them by the OAR and Engineer for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. The Contractor shall prepare and submit a list to the Engineer and OAR as provided under Subsection 38.2. Consent of the Contractor to partial occupancy or use by the Owner shall not be unreasonably withheld.
- 37.3** Immediately prior to such partial occupancy or use, the Owner, OAR, Contractor and Engineer shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.
- 37.4** Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work which is not in conformance with the requirements of the Contract Documents.

38. SUBSTANTIAL COMPLETION

- 38.1** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is Substantially Complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the Contractor's list, the Engineer will conduct a preliminary inspection to determine whether the Work or designated portion thereof is Substantially Complete.

If the Engineer's preliminary inspection discloses any item, whether or not included on the Contractor's list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall complete or correct such item or items upon notification by the Engineer. Upon concurrence by the Engineer and OAR that the Project is sufficiently complete for a Substantial Completion Inspection, the Engineer and OAR will schedule the Substantial Completion Inspection.

- 38.2** When the Work or designated portion thereof is Substantially Complete, the Engineer shall prepare a Certificate of Substantial Completion signed by the Engineer and OAR which shall establish the date of Substantial Completion, shall establish the responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for appropriate action.

39. FINAL ACCEPTANCE.

- 39.1** 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 or completion 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 accordance with the Contract, Plans and Specifications. In such event, the Engineer will make the Final Acceptance and notify the Contractor in writing of the Final Acceptance as of the date of Final Inspection.

- 39.2** Within fourteen (14) Days after the date of Final Acceptance, the Contractor execute, and shall secure from all Subcontractors and Suppliers, and deliver to the Owner acceptable written warranties and guarantees in the form set forth in Section 00194, bearing the date of Final Acceptance stating the period of warranty as required by the Contract Documents. The Contractor is responsible for the warranty of all Work, whether performed by it or by its Subcontractors at any tier. Warranties required by the Contract Documents shall commence on the date of Final Acceptance of the Work or designated portion thereof unless otherwise provided in the Contract Documents.

- 40. NO WAIVER OF LEGAL RIGHTS.** Upon completion of the Work, the Engineer will expeditiously make Final Inspection of the Work and, with the concurrence of the Owner, 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 its Surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill its 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.

- 41. CLAIMS FOR ADJUSTMENT AND DISPUTES.** If for any reason the Contractor deems that additional compensation is due to it for Work or materials not clearly provided for in the Contract, Plans or Specifications or previously authorized as Extra Work, the Contractor shall notify the Engineer in writing of its intention to Claim such additional compensation before it begins the Work on which it bases the Claim. If such notification is not given or the Engineer is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any Claim for such additional compensation. Such notice by the Contractor and the fact that the 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 its 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.

- 42. COST REDUCTION INCENTIVE.** Not applicable for this project.
- 43. CONTRACT CLOSE-OUT.** Subsequent to the Final Acceptance of this Project by the Engineer, the Contractor must comply with the Close Out Requirements set forth in Subsection 18 of Section 00190 of this Contract.
- 44. FURNISHING RIGHTS-OF-WAY.** The Owner will be responsible for furnishing or obtaining from third parties all rights-of-way upon which the Work is to be constructed in advance of the Contractor's operations.

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SUBCONTRACTORS; CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

1. AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

- 1.1 SUBLETTING OF CONTRACT.** The Contractor may sublet any portion of the Work to Subcontractors on the conditions set forth herein. All provisions and requirements of the Contract Documents applicable to the Contractor, including without limitation, insurance and bonding requirements, shall be applicable to any Subcontractors. The Contractor shall be liable for the failure of any such Subcontractor to comply with such requirements. Neither the Owner nor the Engineer will communicate directly with or 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 of the Contractor who is duly authorized to receive and execute orders of the Engineer and to instruct subcontractors.

Should the Contractor elect to subcontract any part of the Work to be performed under the Contract Documents, such subcontract 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 remain primarily liable to the Owner for the acts or omission of any such Subcontractors and no Subcontract shall release the Contractor from such liability to the Owner.

- 1.2** Unless otherwise stated in the Contract Documents or the Bidding requirements, the Contractor, as soon as practicable after the opening of Bids or Proposals, shall furnish in writing to the Owner the names of persons or entities (including, but not limited to, those who are to furnish specially fabricated materials or equipment) proposed for each portion of the Work, including Subcontractors. The Owner shall have the right, but not the obligation, to investigate and object, on a reasonable basis, to any such proposed person or entity. The Owner shall promptly notify the Contractor if any such objection exists. Bids or Proposals from Subcontractors and from other firms which unsuccessfully competed for Subcontracts shall, upon the request of the Owner, be submitted to the Owner for review.
- 1.3** The Contractor shall not subcontract with a proposed person or entity to whom the Owner or OAR has made reasonable and timely objection.
- 1.4** If the Owner or OAR has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or OAR has no reasonable objection. The Total Contract Price shall only be increased by the difference in cost occasioned by such change, if the basis for the Owner's or OAR's objection is other than the failure of such person or entity to conform to the requirements of the Contract, apparent lack of responsibility (i.e., experience, capacity or financial viability), or if the person or firm is proposed as a DBE, and is not certified in accordance with the Owner's Disadvantaged Business Enterprise Program. However, no increase in the Total Contract Price shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required. Substitutions of Subcontractors or persons or entities resulting in decreases in the Contractor's cost shall result in the Owner receiving a deductive Change Order reflecting the decrease in the Contractor's cost.

- 1.5 The Contractor shall not change a Subcontractor previously selected if the Owner or OAR makes reasonable objection to such change. The Owner or OAR shall not withhold approval in those situations where the Contractor has determined that the Subcontractor lacks financial viability, cannot meet construction schedules, or produces inferior or substandard Work. The Owner may require the Contractor to change any Subcontractor previously approved and, if at such time the Contractor is not in default hereunder, the Total Contract Price shall be increased or decreased by the difference in cost occasioned by such change, unless the Owner's objections are based upon the factors set forth in Subsection 1.4 hereof.

2. SUBCONTRACTUAL RELATIONS

- 2.1 The Contractor shall make available to each proposed Subcontractor, prior to the execution of the Subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed Subcontract agreement which may be at variance with the Contract Documents. Subcontractors shall similarly make copies of applicable portions of such documents available to their respective proposed Sub-Subcontractors.
- 2.2 All Work performed for the Contractor by a Subcontractor shall be pursuant to an appropriate written agreement between the Contractor and the Subcontractor. The Contractor shall provide to the Owner or OAR, if requested, copies of all Subcontracts within five (5) Days following the Owner's or OAR's request for the same.

3. **OTHER CONTRACTS.** The Owner may award other contracts for other Work on the Site. The Contractor shall fully cooperate with such other contractors and shall carefully fit its own Work to that provided under other contracts as may be directed by the Engineer. The contractor shall not commit or permit any act which will interfere with their performance of Work by any other contractors, or fail to perform such acts as required to avoid interference with the performance of Work by any other contractor.

In the event of interference between the Work of the Contractor and other contractor(s) working concurrently at the Site, the Engineer will instruct the Contractor as to which Work has priority in performance and such instructions will be binding upon the Contractor. The Contractor shall not have any Claim against the Owner or the Consulting Engineers for any additional compensation whatsoever in connection therewith.

The Contractor shall conduct its operations so as not to interfere with or hinder the progress of completion of the Work being performed by other contractors. Conflicts with other contractors shall be brought to the attention of the Consulting Engineer for this Contract and the Owner immediately upon learning of the conflict.

4. **COOPERATION BETWEEN CONTRACTOR'S.** When separate contracts are let within the limits of any one Project, each contractor shall conduct its Work so as not to interfere with or hinder the progress of completion of the Work being performed by other contractor's. Contractor's 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 its contract and shall protect and save harmless the Owner and the Engineer from any and all damages or Claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other contractor's working within the limits of the same Project. The Contractor shall arrange its 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. Contractor shall join its Work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

5. OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

- 5.1** The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces or to award separate contracts in connection with portions of the Project or other construction or operations on the site.
- 5.2** The OAR shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing related construction schedules when directed to do so. The Contractor shall make any revisions to the Progress Schedule deemed necessary after a joint review and mutual agreement. The Progress Schedules shall then be used by the Contractor, separate contractors and the Owner until subsequently revised.
- 5.3** The OAR will be responsible for coordinating the Work of all contractors on the Project when the Project involves more than one general contractor or is a multi-prime job. The OAR and Owner have the right to make changes in a Contractor's sequence of operations if in their judgment and in their sole discretion changing Project conditions require changes in sequence. The Contractor shall modify its sequence of operations and procedures, as required by the OAR and Owner.

6. MUTUAL RESPONSIBILITY

- 6.1** The Contractor shall promptly afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.
- 6.2** If the proper execution or results of the Contractor's Work depends upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with the affected portion of the Work, promptly report to the OAR, with a copy to the Owner, apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor to report discrepancies or defects shall constitute an acknowledgment that the Owner's or separate contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects which are not discoverable at that time through the exercise of reasonable diligence.
- 6.3** The Contractor shall promptly remedy damage caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors as provided in Subsection 2.5 in Section 00200.
- 6.4** Claims and other disputes and matters in question between the Contractor and a separate contractor shall be subject to the provisions of this Contract with respect to entitlement and recoverable costs. If a separate contractor initiates legal or any other proceedings against the Owner on account of any damage alleged to have been solely caused by the Contractor, the Owner shall notify the Contractor, who shall defend such proceedings at its own expense, or at the Owner's option, pay all defense costs of the Owner including attorney's fees, and if any judgment or award against the Owner arises therefrom, the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorneys' fees and court or other costs which the Owner has incurred over and above those paid directly by the Contractor.

- 6.5** When separate contracts are performed within overlapping limits of construction, or areas which might result in congestion or interference, each contractor shall conduct its Work so as not to interfere with or hinder the progress or completion of the Work being performed by separate contractors.
- 6.6** Any difference or conflict which may arise between the Contractor and separate contractors shall be referred to the OAR for resolution. If the Work of the Contractor is delayed because of any acts or omissions of any separate contractor, then only an extension of time sufficient to compensate for the delay, as determined by the OAR, shall be granted to the Contractor as its sole and exclusive remedy. In no event shall the extension of Contract Time exceed the day-for-day period of delay experienced by the Contractor. The Contractor's entitlement to an extension of Contract Time for such delays shall be conditioned upon timely receipt by the OAR of written notice from the Contractor of the cause of the delay, indicating what measures, if any, the Contractor has employed to minimize the effect of the delay.
- 6.7** The Contractor shall be responsible for controlling all labor employed by it and its Subcontractors for performance of the Work so as to avoid any disruption of or disharmony with other labor being used by separate contractors now or hereafter Working on the Owner's property. The Contractor further agrees that this provision will be included in all of its Subcontracts.
- 7. OWNER'S RIGHT TO CLEAN UP.** If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish as described in Subsection 17 in Section 00120, the Owner may clean up and allocate the cost among those responsible as the OAR determines to be just.
- 8. MULTIPLE CONTRACTS WITH CONTRACTOR-SETOFF.** The Owner and Contractor may enter into more than one contract for the performance of labor or the provision of materials, equipment or supplies. The Owner shall be entitled to setoff any Claims against the Contractor which it may have pursuant to the terms of the Contract Documents against any sums due or claimed to be due to the Contractor from the Owner under any other contract or agreement between the Owner and Contractor.
- 9. 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 or facility, 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 authorized by the Owner, Contractor shall coordinate such authorized Work with the contacts listed in part 10 of this section.

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 a public or private utility service or facility, FAA, or NOAA facility, or a utility service or facility 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 public or private entities by arranging and performing the Work in this Contract so as to facilitate such construction, reconstruction or maintenance by public or private entities 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 such public or private entities, unless otherwise

provided for in the Contract Documents, 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.

10. CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICES AND FACILITIES OF OTHERS.

As Provided in the preceding 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 or facility, FAA or NOAA facilities, 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 its operations and the operations of its Subcontractors and suppliers to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services or facilities, 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 the owners are indicated as follows:

SPECTRUM

151 London Parkway
Birmingham, AL 35211
Mr. Garland Thomas
(205) 591-6880

SPIRE Corporation

410 S. 10th Street
Birmingham, AL 35233
(205) 326-8480
Contact: Mr. Jerrellis Melton
Coordinator-Birmingham Engineering Division

AT&T

TBD

Alabama Power Company

600 North 18th Street
PO Box 2641
Birmingham, AL 35291
Contact: Mr. Jack Page, Engineering
(205) 226-1156

**The Water Works & Sewer Board of the City of
Birmingham**

3600 First Avenue North
PO Box 8301 1 0
Birmingham, AL 35283
Mr. T.M. "Sonny" Jones, Assistant General Manager
Engineering and Maintenance
(205) 251-3261
Contact: Mr. Joe Stewart, Manager, Distribution
(205) 254-0740

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

Jefferson County Environmental Svcs. Dept.

Jefferson County Courthouse
Room A-300
716 Richard Arrington Boulevard N. Birmingham, AL 35203
Mr. David Denard, Director (205) 325-5806
Contact: Mr. Danny Reynolds
(205) 325-5127
Maps (205) 325-5125
Mr. Richard Mixon

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

It is further understood and agreed that the Contractor shall, upon execution of the Contract, notify the Owners of all utility services or other facilities of its 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 of public and private utility services and facilities advised of changes in the Contractor's 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 its 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 hereinabove provided shall be cause for the Engineer to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use excavation methods acceptable to the Engineer within 3 feet 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, it shall immediately notify the person to contact for the utility service or facility 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 its 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 its Surety.

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NONCONFORMING WORK; UNCOVERING AND CORRECTION OF WORK

1. INSPECTION RESULTS.

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.

2. UNCOVERING WORK

2.1 If any portion of the Work is covered contrary to the OAR's or Engineer's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the OAR, Engineer, Owner or any governmental authority, be uncovered for their observation and be recovered (if corrections are not required) or be corrected, if applicable, at the Contractor's expense without change in the Contract Time.

2.2 If a portion of the Work has been covered which the OAR, Engineer, Owner or any applicable governmental authority has not specifically requested to observe prior to its being covered, the Owner may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and restoration shall, by appropriate Change Order, be charged to the Owner. If such Work is not in accordance with the Contract Documents, the Contractor shall pay such costs unless the condition was caused by the Owner or a separate Contractor in which event the Owner shall be responsible for payment of such costs.

3. REMOVAL OF DEFECTIVE OR UNAUTHORIZED WORK. All Work which has been rejected by the Engineer shall be satisfactorily repaired or if it cannot be satisfactorily repaired, it shall be removed and replaced all at no additional cost to the Owner.

Materials not conforming to the requirements of the Contract Documents shall be removed immediately from the site of the Work and replaced with satisfactory material by the Contractor at no additional cost to the Owner.

Work done without control lines and grades having been furnished by the Engineer, Work done beyond the scope of the Contract, Work done without proper inspections, or any Extra Work done without written authority, will be at the Contractor's risk, and such Work shall not be paid for unless written authorization in the form of a Work Order or Change Order is obtained. In the event written authorization is not obtained, such Work shall be removed or replaced by the Contractor at no additional cost to the Owner, upon directions of the Engineer.

Work that is defective or Work that fails to conform with the Contract Documents will be at the Contractor's risk, and no payment shall be made for such Work. As specified in the Technical Specifications or at the option of the Owner, an agreed equitable amount may be deducted from the Total Contract Price in lieu of replacement or repair of Work not fully meeting the requirements of the Contract Documents.

Acceptance by the Owner of such deduction shall not modify the requirements of any guarantees called for by the Contract Documents. Written authorization for such Work must be obtained in the form of a Work Order or Change Order with the appropriate credit to the Owner. In the event written authorization is not obtained, and upon the directions of the Engineer, such Work shall be removed or replaced by the Contractor at no additional cost to the Owner.

If the Engineer so requests, the Contractor shall at any time before Final Acceptance of the Work remove or uncover such portions of the finished Work as may be directed. After examinations, the Contractor shall restore said portions of the Work to the standard required by the Contract Documents. If the Work thus exposed or examined proves acceptable, the uncovering or removing and the replacing of the covering or making good of parts removed shall be at the Owner's expense, but if the Work so exposed or examined proves unacceptable, the uncovering or removing and the replacing of the covering or making good of the defective Work shall be at the Contractor's expense.

No extension of time will be allowed the Contractor in connection with the correction of Work that fails to conform with the Contract documents.

4. CORRECTION OF WORK.

4.1 The Contractor shall promptly correct all Work rejected by the Owner, Engineer or any governmental authority as defective or as failing to conform to the Contract Documents whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all cost of correcting rejected Work, including the cost of additional testing and inspection and compensation for the Engineer's services and the Owner's additional services.

After being notified in writing by the Engineer or the Owner of Work that is not in accordance with the requirements of the Contract Documents, or of any defects in the Work, the Contractor shall promptly commence and prosecute with due diligence all Work necessary to fulfill the terms of the Contract, and to complete the Work within a reasonable period of time.

In the event of an emergency, constituting an immediate hazard to the health or safety of personnel and/or property, the Owner, without prior notice, has the right but not the obligation to undertake at the Contractor's expense, all Work necessary to correct such hazardous condition when it was caused by Work of the Contractor not being in accordance with the requirements of the Contract Documents.

4.2 If, within one year after the date of Final Acceptance of the Work or designated portion thereof, or after the date for commencement of warranties established under Subsection 16.1 of Section 001900, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it within ten (10) days after receipt of written notice from the Owner to do so. This obligation under Subsection 4.2 shall survive Final Acceptance of the Work under the Contract and termination of the Contract. The Owner shall give such notice within a reasonable amount of time after discovery of the condition.

In the event the Contractor fails to comply, the Owner may proceed to have such Work done at the Contractor's expense and the Contractor and/or its Surety will pay the cost thereof upon demand. The Owner shall be entitled to all costs, including reasonable attorney's fees, necessarily incurred upon the Contractor's refusal to pay the above costs.

- 4.3** All such defective or non-conforming Work shall be removed from the site if necessary, and the Work shall be corrected to comply with the Contract Documents without cost to the Owner.

The Contractor shall bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's performing correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

Upon failure on the part of the Contractor to comply forthwith with any order of the Engineer made under the provisions of this Section 001600, the Owner 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.

- 4.4** Nothing contained in Subsection 4 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the time period of one year as described in Subsection 4.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability and damages with respect to the Contractor's obligations other than specifically to correct the Work.

- 5. REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK.** All Work which 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 26 in Section 00120 titled Conformity with Plans and Specifications.

Unacceptable Work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the Final Acceptance of the Work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of the Subsection titled Correction of Work of this Section.

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.

- 6. ACCEPTANCE OF NONCONFORMING WORK**

If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal or correction. If the Owner accepts the Work under such circumstances, the Total Contract Price will be reduced in an equitable manner as determined by the OAR, whether or not Final Payment has been made.

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SECTION 00 17 00
CONTRACT TIME; PROSECUTION AND PROGRESS

1. **DETERMINATION OF CONTRACT TIME.** The number of Calendar Days allowed for completion of the Work shall be stated in the Proposal and the Contract Documents and shall be known as the Contract Time. Time limits stated in the Contract Documents are of the essence of the Contract. The Contractor, by executing the Agreement, confirms that the Contract Time is a reasonable period for performing the Work. The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Section 002800 to be furnished by the Contractor or receipt of the written Notice to Proceed in the form set forth in Section 000880 hereof from the Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion and Final Completion within the time frames established by the Contract Documents. The Engineer shall be responsible for monitoring the Contract Time during the Work. The Engineer will not make charges against the Contract Time prior to the effective date of the Notice to Proceed, and the Engineer will not make charges against the Contract Time after the date of Final Acceptance.

- 1.1 Contract Time based on Calendar Days shall consist of the number of Calendar Days stated in the Contract Documents, beginning on the effective date of the Notice to Proceed and including all Saturdays, Sundays, holidays, and non-work days. All Calendar Days elapsing between the effective dates of the Engineer's orders to suspend and resume all Work, due to causes not the fault of or due to the acts or omissions of the Contractor, shall be excluded from the calculation of Contract Time.
- 1.2 The Engineer shall base its weekly statement of Contract Time charged on the following considerations:
 - 1.2.1 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.
 - 1.2.2 Conditions beyond the Contractor's control and not caused by the acts or omissions of Contractor, its agents, employees or officers, 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 the Owner or Engineer for reasons not the fault of or caused by the acts or omissions of the Contractor, shall not be charged against the Contract Time.
 - 1.2.3 The Engineer will not make charges against the contract time prior to the effective date of the Notice to Proceed.
 - 1.2.4 The Engineer will begin charges against the Contract Time on the first working day after the effective date of the Notice to Proceed.
 - 1.2.5 The Engineer will not make charges against the Contract Time after the date of final acceptance as defined in the subsection title FINAL ACCEPTANCE of Section 00120.

- 1.2.6** The Contractor will be allowed one (1) week in which to file a written protest setting forth its objections to the Engineer's weekly statement of Calendar Days charged to Contract Time. If no objection is filed within such specified time, the weekly statement shall be deemed accepted by the Contractor.
- 1.3** The Contract Time is based on the originally estimated quantities of Work as described in the Proposal. Should the satisfactory completion of the Work 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 of Work bears to the cost of the originally estimated quantities of Work 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 other Supplemental Agreement and shall be made at the time of Final Payment.
- 1.4** ~~When the Contract Time is a specified completion date, it shall be the date on which all Contract Work shall be Substantially Complete.~~
- 1.5** If the Contractor finds it impossible for reasons beyond its control and for causes not due to its acts or omissions (or the acts or omissions of its Subcontractors) to complete the Work within the Contract Time as specified, or as extended in accordance with the provisions of this Section, the Contractor may, at any time prior to the expiration of the Contract Time make a written request to the Engineer for an extension of the Contract Time setting forth the reasons which the Contractor believes will justify the granting of its request. The Contractor's plea that insufficient time was specified in the Proposal or Contract Documents is not a valid reason for extension of the Contract Time. If the Engineer finds that the Work was delayed because of conditions beyond the control and not due to any acts or omissions of the Contractor, the Engineer, with the consent of the Owner, may extend the Contract Time in such amount as the conditions justify. The extended Contract Time shall then be in full force and effect, the same as though it were the original time for completion.
- 1.6** The Contract Time shall be adjusted only by Change Order or Construction Change Directive.
- 2. CONTRACTOR'S SCHEDULES.** Unless the Specifications or other Contract Documents provide otherwise, the following shall apply to the Contractor's Schedule.
- 2.1 Preliminary Schedule.** The Contractor shall submit to the Engineer and Owner a Preliminary Schedule within ten (10) Days after the date of the Notice of Intent to Award the Contract. The Preliminary Schedule shall be in a bar chart format covering all major items of the Work including construction activities, milestone dates, and procurement of materials and equipment. The Preliminary Schedule shall identify approximate start and finish dates and the sequence in which the Contractor proposes to carry out the Work. The Preliminary Schedule shall be based upon the Contract Time specified in the Contract Documents.
- 2.2 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 Documents within ten (10) days after the date set by the Engineer in the written Notice to Proceed, but in any event, the Contractor shall notify the Engineer at least twenty-four (24) hours in advance of the time actual construction operations will begin. The Contractor shall not begin any Work, including Work on an AIP Project, until receipt of the written Notice to Proceed from the Owner.

- 2.3 Baseline Schedule.** Unless otherwise specified, within ten (10) days after the issuance of the Notice to Proceed, the Contractor shall submit to the Engineer a proposed Baseline Schedule which shall be in the format of a critical path method (CPM) precedence diagram (in both a bar chart and graphic network formats). The Baseline Schedule shall be prepared by the Contractor in accordance with the latest edition of the Associated General Contractors of America publication entitled Construction Planning and Scheduling, or as otherwise required by the Contract Documents. The Engineer will review the proposed Baseline Schedule and advise the Contractor of any recommended changes to the logic, sequence, durations of Work activities, or level of detail of the number, description, or division of the Work activities. If the Contractor agrees with and accepts such recommendations, then the Contractor shall promptly revise and resubmit the proposed Baseline Schedule to incorporate the Engineer's comments. The Contractor shall proceed with the Work in accordance with the accepted Baseline Schedule. The Engineer's acceptance of the Baseline Schedule shall not impose on the Owner any responsibility to the Contractor for the accuracy or reasonableness of the Baseline Schedule nor shall the review and acceptance relieve the Contractor from full responsibility therefor. Upon acceptance by the Engineer, the Baseline Schedule shall be the basis for evaluation of all time related issues, unless and until a Progress Schedule is accepted which supersedes the Baseline Schedule logic, sequence, durations of Work activities, or level of detail of the number, description, or division of the Work activities. The Owner shall have no obligation to process or issue payment for an Application for Payment without Contractor's submission of an accepted Baseline Schedule. 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 Work in accordance with the Plans and Specifications within the time set forth in the Proposal.
- 2.4 Progress Schedules.** Each month, the Contractor shall submit a Progress Schedule to update the progress of the Work, as originally set forth in the Baseline Schedule. Progress Schedules must be submitted with each Contractor's Application for Payment and the data contained in the Progress Schedule must accurately correspond to the progress of the Work information contained in the Contractor's Application for Payment. The Contractor's Progress Schedule must accurately reflect the actual progress of the Work as well as any revisions to the logic, sequence, durations of Work activities, or level of detail of the number, description, or division of the Work activities. The Owner shall have no obligation to process or issue payment for an Application for Payment without the Contractor's submission of a current, accurate, and updated Progress Schedule.
- 2.6 Coordination with Other Work of Owner.** The Work under this Contract may be only a part of the Owner's Construction Program. As a result, Work under this Contract may be required to be completed by certain milestone dates set forth in the Contract Documents ("milestone dates") in order to interface with the Work on other components of the Owner's Construction Program. The schedule for the Owner's Construction Program or the specification of milestone dates is not intended to take the place of complete Work

scheduling by the Contractor, but is provided to show certain critical milestone dates for various phases of the Work on which the Contractor's Baseline Schedule or Progress Schedules must be based. There shall be no changes in the milestone dates, except by Change Order or Construction Change Directive. In the event that the Contractor fails to complete any required portions of the Work by the milestone dates, the Contractor may be liable to the Owner for Liquidated Damages in accordance with the term of the Contract Documents.

- 2.7 Failure to Meet Schedules; Recovery Schedules.** The Contractor shall cooperate at all times with the Engineer in order to maintain the progress of the Work in accordance with the Contractor's Baseline Schedule, Progress Schedule and Contract Time requirements. If, however, the Contractor's Progress Schedule reflects that through no fault of the Owner the Contractor is failing to maintain the progress of the Work in accordance with the approved Baseline Schedule for (a) the Work as a whole; (b) a Major Work Item; (c) an item of Work which is on the critical path; or (d) an item of Work not on the original critical path that, because of the delay or anticipated delay, becomes a critical path item, then the Contractor must, within seventy-two (72) hours after written request of the Engineer, submit a written Recovery Schedule detailing the Contractor's plan of action to recover lost time in order to maintain the progress of the Work in accordance with the Contractor's Baseline Schedule, Progress Schedule or Contract Time requirements. In such event, the Contractor shall comply with the Engineer's or Owner's written orders to take whatever steps are necessary to recover lost time and maintain the progress of the Work. These steps may include, but are not limited to, resequencing the Work activities, increasing the number of Contractor's shifts, Workforce, supervision, Work Days, overtime operations, equipment resources, or expediting delivery of materials or equipment. The Contractor shall not be entitled to additional compensation for actions required or ordered under this Section or related Contract provisions. Should the prosecution of the Work be discontinued for any reason, the Contractor shall notify the Engineer at least twenty-four (24) hours in advance of resuming operations.
- 2.8 Claim for Extensions of Contract Time.** Claims relating to extensions of Contract Time shall be made in accordance with applicable provisions of Section 002900 (Claims and Dispute Resolution). A copy of any Claim for a time extension shall be delivered to the Engineer, and the Contractor shall immediately take all steps reasonably possible to minimize the adverse impact of delay events on the Work.
- 2.9 No Waiver by Owner.** The Contractor shall comply fully with all time and other requirements of the Contract Documents. The Owner's approval and payment of an Application for Payment, without the submission of a current, accurate Baseline Schedule or Progress Schedule, shall not constitute a waiver of either the requirement for such updates nor the Owner's right to withhold payment, nor shall the Contractor be relieved from the obligation to complete the Work within the Contract Time.
- 3. TEMPORARY SUSPENSION OF THE WORK.** The Engineer shall have the authority to suspend the Work wholly, or in part, for such period or periods as the Engineer 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 Documents.
- In the event that the Contractor is ordered by the Engineer, in writing, to suspend Work for some unforeseen cause not otherwise provided for in the Contract Documents, not due to the acts or omissions of the Contractor 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, lost profits or incidental or consequential damages to the Contractor. The period of shutdown shall be computed from the effective date of the Engineer order to suspend Work to the effective date of the Engineer's order to resume the Work. Claims for such reimbursement shall be filed with the Engineer within the time period stated in the Engineer's order to resume Work. The Contractor shall submit with its 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 Contractor, 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. The Contractor shall take every precaution to prevent damage or deterioration of the Work performed and provide for normal drainage of the Work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to or from the Airport.

4. FAILURE TO COMPLETE ON TIME; LIQUIDATED DAMAGES.

- 4.1** If any portion of the Work remains uncompleted after the expiration of the Contract Time, including all extensions and adjustments thereto, the Owner will incur substantial injury, including loss of use of facilities and inconvenience to the public. Damages arising from such injuries cannot be calculated with any degree of certainty due to the complexity of the Project. It is agreed that if the Work is not Substantially Complete and Finally Complete within the established time frames or within such further time, if any, as shall be allowed for such completion in accordance with the Contract Documents, then Contractor or the Surety shall pay to the Owner Liquidated Damages, not as a penalty, for such delay in the amount set forth in Subsection 28 of Section 000300 hereof. Permitting the Contractor to continue or finish the Work or any part thereof after the expiration of the Contract Time established by the Contract Documents shall in no way operate as a waiver by the Owner of any of its rights under this Section 001700 to assess Liquidated Damages or to exercise any other remedies provided in the Contract Documents or by law.
- 4.2** For each Calendar Day or Working Day, as specified in the Contract Documents, that any Work remains uncompleted after the Contract Time, including all extensions and adjustments thereof, the amount specified in the Proposal and Contract Documents as Liquidated Damages will be deducted from any money due or to become due the Contractor or its 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 Contract Time provided in the Contract Documents.
- 4.3** Notwithstanding any provision in the Contract Documents to the contrary, including, if the Contractor is delayed in performance of the Work by any act or omission of the Owner, Engineer, OAR, or by any of their members, officers, employees, agents, servants or representatives, or by any separate contractor employed by the Owner, OAR or Engineer, or by changes in the Work ordered by the Owner (as reflected in Change Orders, Construction Change Directives or Field Change Orders), or by fire, unusual inclement weather, or any unforeseen cause which the Contractor lacked any ability to control or manage, all of which occurred without any responsibility, fault or negligence on the part of the Contractor and, in the opinion of the Owner, neither could have been anticipated nor avoided by the Contractor, then the Contract Time shall be extended for an appropriate period of time to compensate the Contractor for the delay, which in no event shall exceed a day-for-day extension for the period of proven actual delay to the critical path; provided that the Contractor has complied with the notice requirements of Section 00290 (Claims and Dispute Resolution) and submitted full documentation supporting the Claim. Neither labor disputes involving the Contractor, its Subcontractors or any other laborers or material men performing the Work, nor inclement weather conditions usually experienced at the Project site during the relevant time period, shall be considered to be unforeseeable, unavoidable or unanticipated for the purposes of this Subsection 4.3.

The Owner's agreement to the issuance of an appropriate extension of Contract Time shall preclude any and all Claims or entitlements the Contractor might have for additional compensation such as acceleration, interference or inefficiencies associated with either delays affecting the Contractor's ability to perform the Work, or additions to the scope of the Work.

5. **RIGHT TO DEMAND PERFORMANCE BY SURETY.** In addition to other remedies available to the Owner, if the Contractor fails to maintain the progress of the Work in accordance with the Contractor's Baseline Schedule, Progress Schedule or Contract Time requirements, the Owner may, upon seven (7) Days written notice to the Contractor and its Surety, order the Contractor to suspend or cease all or a portion of the Work and the Owner may demand that the Surety prosecute all or a portion of the Work in accordance with the Contract Documents. Failure of the Surety to so perform within seven (7) Days of receipt of such notice shall be grounds for the Owner to prosecute the Work at Surety's and Contractor's expense.

6. **NO DAMAGE FOR DELAY TO CONTRACTOR**

- 6.1 Notwithstanding any provision in the Contract Documents to the contrary, an extension of the Contract Time shall be the Contractor's sole and exclusive remedy for any delay of any kind or nature, unless the delays were caused solely by acts constituting intentional interference by the Owner with the Contractor's performance of the Work, and such acts continue after the Contractor's written notice to the Owner of such interference. Intentional interference is an act or omission by the Owner by which it intentionally, willfully or knowingly seeks to delay the progress of the Work. The Owner's exercise of any of its rights or privileges under the Contract Documents, including, but not limited to (a) rights to change the scope of Work, regardless of the extent or number of changes, and (b) rights to suspend or terminate the Work and carry out the Work shall not under any circumstances be construed as intentional interference with the Contractor's performance of the Work. In no event, including circumstances in which the Owner has intentionally interfered with the Contractor's performance of the Work, shall the Contractor be entitled to recover from the Owner any indirect, incidental, special or consequential damages in any proceeding arising out of or relating to this Contract or the breach thereof.

- 6.2 Regardless of any early completion date anticipated by the Contractor in its Bid or Proposal, or indicated by the Contractor on any Progress Schedule or any other form of communication, under no circumstances (other than intentional interference by the Owner as set forth in Subsection 6.1) shall the Contractor be entitled to additional compensation for delays unforeseen by the Contractor in its performance of the Work caused by circumstances beyond its control where the Work is completed within the Contract Time, as amended by Change Order or Supplemental Agreement.

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SECTION 00 18 00
TERMINATION OR SUSPENSION OF THE CONTRACT

1. TERMINATION BY THE CONTRACTOR

- 1.1 The Contractor may terminate the Contract because the Work has been stopped for a period of thirty (30) Days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under Contract with the Contractor, provided the Contractor notifies the Owner and Engineer in writing of such intent and the Owner has not cured the Work stoppage within fourteen (14) Days after receipt of such notice. The Contractor may exercise this termination right for any of the following reasons:
 - 1.1.1 Issuance of an order of a court or other public authority having jurisdiction;
 - 1.1.2 An act of government, such as a declaration of national emergency, making material unavailable;
 - 1.1.3 Because the Engineer has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 001900 (Measurement of Work and Payment), or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or,
 - 1.1.4 If repeated suspensions, delays or interruptions by the Owner as described in Subsection 5 of Section 000900 hereof constitute in the aggregate more than 100 percent of the total number of Days scheduled for completion, or 120 Days in any 365-Day period, whichever is less.
- 1.2 If the Contractor terminates the Contract per Subsection 1.1 of this Section 001700, the Contractor may recover from the Owner payment for Work executed and actual reasonable costs incurred with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead, profit and damages earned to the date of termination but excluding anticipatory profits. The Contractor shall justify its Claims as requested by the Owner with accurate records and data.
- 1.3 Termination of the Contract or a portion thereof pursuant to Subsection 1.1 shall neither relieve the Contractor of its responsibilities for the completed Work nor shall it relieve its Surety of its obligation for and concerning any Claim arising out of the Work performed.

2. TERMINATION BY THE OWNER FOR CAUSE; DEFAULT OF CONTRACTOR

- 2.1 The Contractor shall be considered in default under the Contract Documents, and such default will be considered as cause for the Owner to terminate the Contract if the Contractor:
 - 2.1.1 Fails to begin the Work under the Contract within the time specified in the "Notice to Proceed," or
 - 2.1.2 Fails to perform the Work in the time or manner set forth in the Contract Documents (including, without limitation, submitting to Owner or Engineer reports, documents or other paper work required to perform or complete the Work), or fails to provide a sufficient number of adequately skilled Workers or supervisory staff who actively staff the job and prosecute the Work, or fails to have available at the site proper equipment or materials to assure completion of the Work in accordance with the terms of the Contract Documents, or

- 2.1.3** 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
 - 2.1.4** Fails to commence the Work, maintain adequate progress towards completion of the Work or discontinues the prosecution of the Work, or
 - 2.1.5** Fails to resume Work which has been discontinued within a reasonable time after notice to do so, or
 - 2.1.6** Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, consents to the appointment of a receiver, trustee or liquidator of all or substantially all of the property or assets of Contractor, or
 - 2.1.7** Allows any final judgment against it to remain unsatisfied for a period of thirty (30) days, or
 - 2.1.8** Makes an assignment for the benefit of creditors, or
 - 2.1.9** Fails to carry out the requirements of the Owner's DBE Participation Program, or
 - 2.1.10** If at any time the Surety executing the bond is determined by the Owner to be unacceptable, and the Contractor fails to furnish an acceptable substitute Surety within ten (10) Days after notice from the Owner, or
 - 2.1.11** For any other cause whatsoever fails to carry out the Work in an acceptable manner and within the time prescribed by the Contract Documents.
- 2.2** When any of the above reasons exists, the Engineer or Owner shall immediately give written notice to the Contractor and the 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 ten (10) days after such notice, does not cure such default to the satisfaction of the Engineer and the Owner, 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, terminate the Contract or with or without terminating the Contract:
 - 2.2.1** Take possession of the site and of all materials, equipment, tools, and construction equipment and machinery, including that owned by the Contractor;
 - 2.2.2** Enter into an agreement with a third party contractor for the completion of the Work under the Contract, and/or accept assignment of Subcontracts for all or part of the Work;
 - 2.2.3** Finish the Work by whatever reasonable method the Owner may deem necessary;
 - 2.2.4** Call on the Surety to complete the Work;
 - 2.2.5** Exercise any remedies available under the Contract Documents or at law or in equity.
- 2.3** When the Owner terminates the Contract for one of the reasons stated in Subsection 2.1 of this Section 001800, the Contractor shall not be entitled to receive any payment of any amounts unless and until the Work is completed and the costs for such completion have been paid in full.
- 2.4** 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 to the Contractor under the Contract, then the Contractor and the Surety shall be liable and shall pay to the Owner the amount of such excess on demand. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Engineer and agreed to by the Owner, upon application, and this obligation for payment shall survive termination of the Contract. Termination of the Contract or a portion thereof pursuant to Subsection 2.2 above shall neither relieve the Contractor of its responsibility for the completed Work nor shall it relieve its Surety of its obligation for and concerning any Claim arising out of the Work performed.

3. **TERMINATION FOR CAUSE (CONSTRUCTION)**Section 80-09 of FAA Advisory Circular 150/5370-10 establishes standard language for conditions, rights, and remedies associated with Owner termination of this contract for cause due to default of the Contractor.
4. **TERMINATION FOR CAUSE (EQUIPMENT)**The Owner may, by written notice of default to the Contractor, terminate all or part of this Contract for cause if the Contractor:
 1. Fails to begin the Work under the Contract within the time specified in the Notice-to-Proceed;
 2. Fails to make adequate progress as to endanger performance of this Contract in accordance with its terms;
 3. Fails to make delivery of the equipment within the time specified in the Contract, including any Owner approved extensions;
 4. Fails to comply with material provisions of the Contract;
 5. Submits certifications made under the Contract and as part of their proposal that include false or fraudulent statements; or
 6. Becomes insolvent or declares bankruptcy.

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

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

Payment for completed equipment delivered to and accepted by the Owner shall be at the Contract price. The Owner may withhold from amounts otherwise due the Contractor for such completed equipment, such sum as the Owner determines to be necessary to protect the Owner against loss because of Contractor default.

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

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

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

5. TERMINATION FOR CAUSE (PROFESSIONAL SERVICES)

Either party may terminate this Agreement for cause if the other party fails to fulfill its obligations that are essential to the completion of the work per the terms and conditions of the Agreement. The party initiating the termination action must allow the breaching party an opportunity to dispute or cure the breach.

The terminating party must provide the breaching party [7] days advance written notice of its intent to terminate the Agreement. The notice must specify the nature and extent of the breach, the conditions necessary to cure the breach, and the effective date of the termination action. The rights and remedies in this clause are in addition to any other rights and remedies provided by law or under this agreement.

a) **Termination by Owner:** The Owner may terminate this Agreement for cause in whole or in part, for the failure of the Consultant to:

1. Perform the services within the time specified in this contract or by Owner approved extension;
2. Make adequate progress so as to endanger satisfactory performance of the Project; or
3. Fulfill the obligations of the Agreement that are essential to the completion of the Project.

Upon receipt of the notice of termination, the Consultant must immediately discontinue all services affected unless the notice directs otherwise. Upon termination of the Agreement, the Consultant must deliver to the Owner all data, surveys, models, drawings, specifications, reports, maps, photographs, estimates, summaries, and other documents and materials prepared by the Engineer under this contract, whether complete or partially complete.

Owner agrees to make just and equitable compensation to the Consultant for satisfactory work completed up through the date the Consultant receives the termination notice. Compensation will not include anticipated profit on non-performed services.

Owner further agrees to hold Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

If, after finalization of the termination action, the Owner determines the Consultant was not in default of the Agreement, the rights and obligations of the parties shall be the same as if the Owner issued the termination for the convenience of the Owner.

b) **Termination by Consultant:** The Consultant may terminate this Agreement for cause in whole or in part, if the Owner:

1. Defaults on its obligations under this Agreement;
2. Fails to make payment to the Consultant in accordance with the terms of this Agreement;
3. Suspends the project for more than [180] days due to reasons beyond the control of the Consultant.

Upon receipt of a notice of termination from the Consultant, Owner agrees to cooperate with Consultant for the purpose of terminating the agreement or portion thereof, by mutual consent. If Owner and Consultant cannot reach mutual agreement on the termination settlement, the Consultant may, without prejudice to any rights and remedies it may have, proceed with terminating all or parts of this Agreement based upon the Owner's breach of the contract.

In the event of termination due to Owner breach, the Consultant is entitled to invoice Owner and to receive full payment for all services performed or furnished in accordance with this Agreement and all justified reimbursable expenses incurred by the Consultant through the effective date of termination action. Owner agrees to hold Consultant harmless for errors or omissions in documents that are incomplete as a result of the termination action under this clause.

6. SUSPENSION OR TERMINATION BY THE OWNER FOR CONVENIENCE

- 6.1** The Owner may, without cause, by written order direct the Contractor to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine for the convenience of the Owner.
- 6.2** An extension of Contract Time equal to the period of suspension shall be the Contractor's sole and exclusive remedy for a suspension by the Owner for convenience. No adjustment to Contract Time shall be made to the extent:
 - 6.2.1** That performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
 - 6.2.2** That an equitable adjustment is made or denied under another provision of this Contract.
- 6.3** The Owner may terminate this Contract in whole or in part at any time for its convenience by giving the Contractor seven (7) Days' written notice. The Owner shall have the right, in that event, to take over any or all of the Contractor's Subcontracts, purchase orders, agreements, leases for the Project, and any material, supplies, or equipment purchased solely for the Project, which are to remain property of the Owner following Final Acceptance, in order to complete the Work and the Contractor shall assign to the Owner such material, supplies, equipment, or Subcontracts/purchase orders. The Contractor shall proceed to complete any part of the Work, as directed by the Owner, and shall attempt to settle all Subcontractor/supplier Claims and obligations under the Contract with the Owner. Subject to the limitations in Section 001100 hereof (Changes in the Scope of Work), the Contractor shall be compensated by the Owner for the Contractor's costs (including reasonable profits earned on Work performed up to the date of termination as provided in the Contract Documents, but excluding anticipatory profits on unperformed portions of the Work), and the Contractor shall justify its Claims as requested by the Owner with accurate Records and data.
- 6.4** The Owner shall terminate the Contract or portion thereof by written notice when the Contractor is prevented from proceeding with the Contract as a direct result of an Executive Order of the President of the United States. When the Contract, or any portion thereof, is terminated pursuant to this Subsection 3.4 before completion of all items of Work in the Contract, payment will be made, subject to the limitations of Section 001100 (Changes in the Scope of Work), for the actual number of units or items of Work completed at the Contract price or as mutually agreed to for items of Work partially completed or not started.

No Claims for loss of anticipatory profits shall be permitted. Reimbursement for 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 which are not incorporated in the Work shall, at the option of the Owner, 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 or OAR. Termination of the Contract or a portion thereof pursuant to this Subsection 3.4 shall neither relieve the Contractor of its responsibilities for the completed Work nor shall it relieve its Surety of its obligation for and concerning any Claim arising out of the Work actually performed.

7. TERMINATION FOR NATIONAL EMERGENCIES.

- 7.1** The Owner shall terminate the Contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction of the Work as a direct result of an Executive Order of the President of the United States with respect to the prosecution of war or in the interest of national defense.
- 7.2** 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.
- 7.3** 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 by the Owner, the intent being that an equitable settlement will be made with the Contractor.
- 7.4** 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.
- 7.5** Termination of the Contract or a portion thereof shall neither relieve the Contractor of its responsibilities for the completed Work nor shall it relieve its Surety of its obligation for and concerning any Claim arising out of the Work actually performed.

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SECTION 00 19 00

MEASUREMENT OF WORK; PAYMENT; FINAL ACCEPTANCE; CONTRACT CLOSE-OUT

00190-01 MEASUREMENT OF QUANTITIES. Refer to GP-90-01

00190-02 SCOPE OF PAYMENT. Refer to GP-90-02.

00190-03 COMPENSATION FOR ALTERED QUANTITIES. Refer to GP-90-03.

00190-04 PAYMENT FOR OMITTED ITEMS. Refer to GP-90-04.

00190-05 PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK. Refer to GP-90-05

00190-06 PARTIAL PAYMENTS. Refer to GP-90-06.

00190-07 PAYMENT FOR MATERIALS ON HAND. Refer to GP-90-07.

00190-08 PAYMENT OF WITHHELD FUNDS. Refer to GP-90-08

00190-09 SCHEDULE OF VALUES. Before the first Application for Payment on lump sum Contracts, including those which contain unit prices for certain portions of the Work, the Contractor shall submit to the Owner, OAR and Engineer for approval a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy and reasonableness as the Owner, OAR and Engineer may require. The schedule of values shall be prepared in such a manner that each Major Work Item and each Subcontracted item of Work is shown as a separate line item on AIA Document G702, Application and Certificate for Payment, Continuation Sheet or other form acceptable to the Owner, OAR and Engineer.

00190-10 APPLICATIONS FOR PAYMENT

- a. By the 25th of the month and projected out through the end of the month, the Contractor shall submit to the Engineer and OAR four (4) original itemized Applications for Payment for Work completed in accordance with the schedule of values or unit price schedule. Each Application for Payment shall be notarized and supported by such data required by the Contract Documents substantiating the Contractor's right to payment (such as copies of requisitions from Subcontractors and material suppliers) and reflecting retainage in the amount of ten percent (10%) unless otherwise provided in the Contract Documents or agreed to by the Owner at its sole discretion.

Each Application for Payment shall be certified as correct by Contractor. The Contractor shall submit waivers of lien/bond rights and other documentation from Subcontractors and Suppliers to evidence the status of payments. Each Application for Payment shall contain separate line items for Designated Mobilization Payments to DBE Contractors in accordance with Subsection 10b(3)(a) of this Section 00190.

In addition, each Application for Payment shall contain the following certification: "Contractor hereby certifies that, except as indicated on the attached documents, there are no written Claims of Subcontractors or Suppliers submitted to the Contractor as of the date of this Application for Payment that have not been completely paid or resolved, that the Contractor has no knowledge of any unsolved Claims by Subcontractors or Suppliers with respect to the Work, that all due and payable bills with respect to the Work have been paid to date or shall be paid from the proceeds of this Application for Payment, and that there is no known basis for the filing of any Claim on the Work."

b. Applications for Payment must also comply with the following items or conditions:

- (1)** Applications for Payment may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives or Field Change Orders, but not yet included in Change Orders.
- (2)** Applications for Payment may not include requests for payment of amounts the Contractor does not intend to pay to a Subcontractor or material supplier because of a dispute or other reason.
- (3)** If the Contractor or Subcontractor is certified as a DBE, the Contractor or Subcontractor shall be eligible to receive a Designated Mobilization Payment equal to five percent (5%) of the Total Contract Price, or if approved by the Owner's Director of Engineering and Construction, such greater amount not to exceed ten percent (10%) of the Total Contract Price. However, the Contractor or Subcontractor shall only be entitled to receive the Designated Mobilization Payment, in the form of a certificate of deposit purchased by the Owner, in the name of the Contractor, from a lending institution participating in the DBE Working capital initiative, and upon satisfaction of the following conditions:
 - (a)** The Contractor or Subcontractor has established a Working capital line of credit agreement ("Working Capital Agreement"), as that term is utilized in the DBE Program, with a lending institution participating in the DBE Working capital initiative as set forth in the DBE Program;
 - (b)** The Contractor or Subcontractor has requested payment of the Designated Mobilization Payment in an Application for Payment accompanied by a properly executed Working Capital Agreement with a participating lending institution;
 - (c)** The Owner has issued a Notice To Proceed to the Contractor or Subcontractor;
 - (d)** The Owner shall have ten (10) Working Days after approval of the Contractor's Application for Payment within which to issue the Designated Mobilization Payment. The Owner may issue (as provided below) the Designated Mobilization Payment prior to the commencement of the Work at the Project site;
 - (e)** The Contractor or Subcontractor shall pledge (as that term is defined under the Working Capital Agreement) the Designated Mobilization Payment as collateral with a participating lending institution under a Working Capital Agreement;
 - (f)** The Contractor or Subcontractor shall provide the Owner with proof that the Contractor is participating in the Owner's technical assistance program as that program is described in Section V of the Owner's DBE program.
 - (g)** The Total Contract Price is between \$80,000 and \$200,000; and

- (h) The Contractor or Subcontractor has not entered into an assignment of the Contract proceeds to obtain a line of credit from a non-participating lending institution.
- c. Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon the Contractor's compliance with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include applicable insurance, storage and transportation to the site for such materials and equipment stored off the site. If so requested by the Owner, the Contractor shall submit, within thirty (30) Days after the date of commencement of the Work and thereafter as the Owner requires, material delivery schedules for each category or Subcontract for which application for payment under Subsection 10.2 will be made, which schedules shall include items, quantities, value or unit prices with extensions and the month in which Application for Payment with respect thereto is expected to occur. Schedules shall be updated on a monthly basis and submitted as an attachment to the Contractor's Application for Payment. The Owner has no obligation to pay the Contractor if the updated monthly schedule is not provided.
- d. The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment on such Application for Payment by the Owner to the Contractor. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be free and clear of liens, Claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a Claim by reason of having provided labor, materials and equipment relating to the Work.
- e. Concurrent with the Contractor's submission of an Application for Payment, the Contractor shall submit an updated Progress Schedule pursuant to Subsection 2.4 of Section 00170 and make available for review and inspection by the Owner, Engineer or OAR an updated version of the As-Built Drawings, prepared in accordance with the requirements of Subsection 2 of Section 00100, reflecting all items of Work for which the Contractor is seeking payment. Failure to have the updated As-Built Drawings available for review or to reflect items of Work on the updated As-Built Drawings for which payment is sought will result in the Owner's withholding payment or partial payment from the Contractor until such time as properly updated As-Built Drawings are prepared.

00190-11 CERTIFICATES FOR PAYMENT

- a. The Engineer or OAR shall, within ten (10) Days after receipt of the Contractor's Application for Payment, either forward the Certificate for Payment, with a copy to the Contractor and Owner, for such amount as the Engineer and OAR determine is properly due, or notify the Contractor and Owner in writing of the reasons for withholding certification in whole or in part as provided in Subsection 12a of this Section 001900.
- b. The issuance of the Certificate for Payment will constitute a representation by the Engineer and OAR to the Owner, based upon the Engineer's and OAR's observations at the site and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The Contractor shall not rely upon these representations as the Owner's acceptance of the Work since they are made for payment purposes only and are subject to an evaluation of the Work for conformance with the Contract Documents upon

Substantial Completion, to results of subsequent tests and inspections, to minor deviations from the Contract Documents correctable prior to completion and to specific qualifications expressed by the Engineer. The issuance of the Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of the Certificate for Payment is a representation that the Engineer or OAR have (a) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (b) reviewed construction means, methods, techniques, sequences or procedures, (c) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (d) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Total Contract Price. The Contractor may not rely upon the Engineer's or OAR's Certificate of Payment as approval and acceptance of the Work reflected thereon.

00190-12 DECISIONS TO WITHHOLD CERTIFICATION

- a. The Engineer or OAR may decide not to certify payment and may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Engineer's or OAR's opinion the representations to the Owner required by Subsection 11.2 cannot be made. If the Engineer or OAR is unable to certify payment in the amount of the Application, the Engineer or OAR will notify the Contractor and Owner as provided in Subsection 11.1. If a revised Application for Payment amount cannot be agreed upon, the Engineer or OAR will promptly issue a Certificate for Payment for the undisputed amount. The Engineer or OAR may also decide not to certify payment or, because of subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Engineer's or OAR's opinion to protect the Owner from loss caused by the Contractor because of the following:
 - (1) Defective Work not remedied;
 - (2) Third party Claims filed or reasonable evidence indicating probable filing of such Claims;
 - (3) Failure of the Contractor to make payments properly to Subcontractors for labor, materials or equipment;
 - (4) Damage to the Owner or another Contractor;
 - (5) Reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or Liquidated Damages arising from the anticipated delay or other impact;
 - (6) Failure to prepare and make available properly updated As-built Drawings in accordance with the requirements of Subsection 2 of the Section 00100;
 - (7) Persistent failure to carry out the Work in accordance with the Contract Documents;
or
 - (8) Failure to submit a current, accurate Progress Schedule with an Application for Payment.
- b. When the above reasons for withholding certification are removed, certification will be made by the Engineer and OAR for amounts previously withheld.

- c. If the Contractor disputes any determination by the Engineer or OAR with regard to any Certificate of Payment, the Contractor nevertheless shall continue to expeditiously prosecute the Work and assert a Claim as provided in Section 002900 of this Contract.

00190-13 PROGRESS PAYMENTS AND RETAINAGE

- a. The Certificate of Payment shall be processed and forwarded to the Owner within ten (10) Days after the Engineer's or OAR's receipt of the Contractor's Application for Payment. If the Application for Payment has been received by the Engineer or OAR by the 25th Day of the month, the Owner shall make payment to the Contractor of the amount specified in the Certificate for Payment (which shall provide for all applicable retentions, including, but not limited to ten percent (10%) retainage on all progress payments), within thirty (30) Days. Payment by the Owner shall not constitute approval or acceptance of any item of cost in the Application for Payment. No partial payment made hereunder shall be or be construed to be Final Acceptance or approval of that portion of the Work to which such partial payment relates or relieve the Contractor of any of its obligations hereunder. The Owner shall make no payment unless the Contractor has complied with the requirements of Subsection 10.1.

b. Subcontractor Retainage.

- (1) The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of each Subcontractor's portion of the Work, the amount to which each Subcontractor is entitled, subject to amounts actually retained from payments to the Contractor on account of each Subcontractor's portion of the Work. If a Subcontractor is a certified DBE participating in the Designated Mobilization Payment procedure set forth in Subsection 10.2.3, the Contractor shall retain no more than five percent (5%) of the amount earned by the DBE Subcontractor.
 - (2) The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-Subcontractors in a similar manner, except that DBE Subcontractors shall not be required to reduce retainage held on Sub-Subcontractors.
 - (3) If required by the Owner, within ten (10) Days of receipt of payment from the Owner, the Contractor shall send to the Owner copies of checks paid for all items of the Contractor's costs listed in the Application for Payment that were not paid prior to the date on which the Application for Payment was submitted.
- c. Neither the Owner, OAR, nor Engineer shall have any obligation to pay or to assure the payment of money to a Subcontractor for Work on the Project. The Owner may, however, demand sworn statements of accounts from Subcontractors or suppliers and, at the Owner's sole discretion, pay Subcontractors or Suppliers by joint checks or directly for those amounts agreed by the Contractor as due and owing. In such event, the Contractor agrees any such payments shall be treated as a direct payment to the Contractor's account and deducted from the amount otherwise due the Contractor hereunder.
- d. If the Contractor employs any Subcontractor which is a certified DBE participating in the designated mobilization payment procedure set forth in Subsection 10b(3), the Contractor shall be permitted to substitute securities for retainage to be earned by the Contractor in accordance with Alabama Statute, or such other procedures as may be approved by the Owner.

00190-14 CONTINUED PERFORMANCE PENDING PAYMENT. The Owner's obligation to make timely payments and the Contractor's obligations to diligently prosecute the Work shall continue uninterrupted during the pendency of any bona fide dispute between the Owner and the Contractor.

00190-15 SUBSTANTIALCOMPLETION.

- a. On Substantial Completion of the Work, as determined in accordance with Subsection 38 of Section 00120 of the Contract, the Owner shall have no obligation for partial release of retainage, unless expressly set forth in the Contract Documents or otherwise agreed to by the Owner.
- b. In the event Final Acceptance shall not occur within forty-five (45) days after the date of Substantial Completion not due to the fault of the Owner, Liquidated Damages against Contractor shall be assessed in the amount set forth in Subsection 28 of Section 00030 of this Contract.

00190-16 FINAL ACCEPTANCE AND FINAL PAYMENT

- a. When the Contract Work has been finally accepted in accordance with the requirements of the Subsection titled Final Acceptance of Subsection 41 of Section 00120 the Engineer will prepare the final estimate of the items of Work actually performed. The Contractor shall approve the Engineer's final estimate or advise the Engineer of its objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the Contract as amended by Change Order or Supplemental Agreement.
The Contractor and the Engineer shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within thirty (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 Subsection 40 of Section 00120, titled Claims for Adjustment and Disputes.
- b. 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 Documents. All prior partial estimates and payments shall be subject to correction in the final estimate and Final Payment. The Final Payment will be made on satisfaction by the Contractor of the Close-Out requirements set forth in Section 00190-18.
- c. If the Contractor has filed a Claim for additional compensation under the provisions of the Subsection 40 of Section 00120, titled Claims for Adjustment and Disputes or under the provisions of this Subsection, such Claims will be considered by the Owner in accordance with the Contract and 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.
- d. If, after Substantial Completion of the Work, Final Acceptance thereof is materially delayed for a period exceeding forty-five (45) Days, through no fault of the Contractor or by issuance of Change Orders affecting Final Completion, and the Engineer or OAR so confirms, the Owner may, upon application by the Contractor and certification by the Engineer and OAR, and without terminating the Contract, make payment of the balance due for the portion of the Work that is fully completed and accepted.
If the remaining balance for Work not fully completed or corrected is less than the retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of Surety to Final Payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Engineer and OAR prior to certification of such payment, such payment may be made, under terms and conditions governing Final Payment, except that it shall not constitute a waiver of Claims.

- e. Acceptance of Final Payment by the Contractor, Subcontractor or material supplier shall constitute a waiver of Claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

00190-17 OWNER'S AUDIT RIGHTS

- a. The Contractor's records shall be open to inspection and subject to audit or reproduction by the Owner's agent or its authorized representative to the extent necessary to adequately permit evaluation and verification of Cost of the Work, and any invoices, Change Orders, Construction Change Directives, Field Change Orders, Force Account payments or Claims submitted by the Contractor or any of its payees pursuant to the execution of the Contract and include but are not limited to the following: accounting records (hard copy, as well as computer readable data), written policies and procedures; Subcontract files (including Proposals of successful and unsuccessful Bidders, Bid recaps, etc.); original estimates; estimating Work sheets; correspondence; Change Order files (including documentation covering negotiated settlements); back charge logs and supporting documentation; general ledger entries detailing cash and trade discounts earned, insurance rebates and dividends; documents described in Subsection 4.6 of Section 00110; and any other supporting evidence deemed necessary by the Owner to substantiate charges related to this Contract (all foregoing hereinafter referred to as "Contractor's Records"). Records described above shall be maintained and made available to the Owner or Owner's Agent for not less than five (5) years after date of Final Completion.
- b. Audits may require inspection and copying from time to time and at reasonable times and places of any and all information, materials and data of every kind and character, including without limitation, the Contractor's Records as provided in Section 00190-17a, books, papers, documents, subscriptions, recordings, agreements, purchase orders, leases, Contracts, commitments, arrangements, notes, daily diaries, Superintendent reports, Drawings, receipts, vouchers and memoranda, and any and all other agreements, sources of information and matters that may in the Owner's judgment have any bearing on or pertain to any matters, rights, duties or obligations under or covered by any Contract Document. Such Contractor's Records subject to audit shall also include, but not be limited to, those Contractor's Records necessary to evaluate and verify direct and indirect costs (including overhead allocations), as they may apply to costs associated with this Contract.
- c. The Owner or its designee shall be afforded access to all of the Contractor's Records, and shall be allowed to interview any of the Contractor's employees, pursuant to the provisions of this article throughout the term of this Contract and for a period of three years after Final Payment or longer if required by law.
- d. The Contractor shall require all Subcontractors, insurance agents, and Material Suppliers (payees) to comply with the provisions of this article by insertion of the requirements hereof in a written Contract agreement between the Contractor and payee. Such requirements will also apply to Sub-Subcontractors and Subcontractors' Material Suppliers.

The Contractor will cooperate fully and will cause all related parties and all of the Contractor's Subcontractors (including those entering into lump sum Subcontracts) to cooperate fully in furnishing or in making available to Owner from time to time whenever requested in an expeditious manner any and all such information, materials and data.

- e. The Owner, OAR and Engineer or their authorized representative shall have access to the Contractor's facilities, shall have access to all necessary Contractor's Records, and shall be provided adequate and appropriate Work space, in order to conduct audits in compliance with this article.

- f. If an audit inspection or examination in accordance with this article, discloses overcharges (of any nature) by the Contractor to the Owner in excess of one percent (1%) of the total Contract billings, the actual cost of the Owner's audit shall be reimbursed to the Owner by the Contractor. Any adjustments or payments which must be made as a result of any such audit or inspection of the Contractor's Records shall be made within a reasonable amount of time (not to exceed 90 Days) from presentation of the Owner's finding to the Contractor. Interest on any overpayments to the Contractor shall be recovered by the Owner at the rate of six percent (6%) per annum.

00190-18 CLOSE OUT.

- a. The following requirements must be satisfied by the Contractor before Final Payment can be made:
 - (1) The Contractor must publicly advertise the Notice of Completion furnished by the Engineer a minimum of once a week for four consecutive weeks and provide to the Engineer evidence of publication.
 - (2) The Contractor must execute and deliver to the Engineer copies of Contractor's Affidavit of Payment of Claims and Debts on the form furnished by the Engineer as set forth in Section 001910.
 - (3) The Contractor must have its Surety execute and deliver to the Engineer the Consent of Surety to Final Payment as set forth in Section 001920.
 - (4) The Contractor must execute and deliver to the Engineer Final Release Form as set forth in Section 001930, whereby, among other things, the Contractor acknowledges and agrees that acceptance of Final Payment by the Contractor constitutes a waiver of all Claims, present or future, against Owner in connection with this Project.
 - (5) The Contractor must execute and deliver to the Engineer a Guarantee of Work as set forth in Section 001940, whereby Contractor guarantees all defects in material and Workmanship for a period of one (1) year commencing on the date of Final Acceptance.
 - (6) If any items warranted by the manufacturer or supplier have been incorporated in the Work, the Contractor must execute and deliver to the Engineer an Assignment of Warranties to Owner as set forth in Section 00195. Copies of said warranties shall be bound in one binder and submitted along with the Assignment of Warranties to Owner.
 - (7) The Contractor must provide one complete set of "As-Built" Drawings covering all aspects of the Work. The Contractor shall be responsible for the final cross sections. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, markers and skilled personnel, as may be required, to obtain accurate cross sections.
 - (8) The Contractor must provide certificates of insurance for the Warranty Period.
 - (9) The Contractor shall provide to the Engineer all Operating and Maintenance information for all materials, products, equipment and systems that will require future care, maintenance and/or cleaning by the Owner, including, but not limited to the following, if applicable: warranties, shop drawings, equipment manufacturer's schematics, test and balance reports, fire protection hydraulic calculations, operation and maintenance instructions, service and maintenance contracts, wiring diagrams and electrical panel schedules.

All information submitted in accordance with this Subsection 18a of Section 00190 shall be subject to the approval of the Owner and Engineer prior to final acceptance thereof and final payment.

b. The Contractor shall return or submit to the Engineer, the following:

- (1)** Parking and Other Access Permits.
- (2)** Security Badges & ID's.
- (3)** Keys.

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SECTION 00 19 10
CONTRACTOR'S AFFIDAVIT OF PAYMENT OF CLAIMS & DEBTS

Project: Taxiway Alpha Emergency Patching

Owner: Birmingham Airport Authority

Contractor: _____

State of: Alabama

County of: Jefferson

The undersigned, a duly authorized officer of the Contractor, hereby certifies that, except as listed below, the Contractor has paid in full or otherwise satisfied all obligations for all materials and equipment furnished, for all Work, labor and services performed, and for all known indebtedness and Claims (as defined in the Contract Documents) against the Contractor for damages arising in any manner in connections with the performance of the Contract Work referenced above for which the Owner or its property might in any way be held responsible.

EXCEPTION: (If none, write none):

Subscribed and sworn to before me this the _____ day of _____, 20____

Contractor

By: _____ (Seal)

Name: _____

Title: _____

[NOTARY SEAL]

Notary Public: _____

My Commission Expires: _____

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SECTION 00 19 20
CONSENT OF SURETY COMPANY TO FINAL PAYMENT

Project: Taxiway Alpha Emergency Patching

Owner: Birmingham Airport Authority

Contractor: _____

In accordance with the provision of the Contract Documents between the Owner and the Contractor as indicated above, _____
_____, Surety Company on bond of

(Name of Contractor), hereby approves the Final Payment to the Contractor and agrees that Final Payment to the Contractor shall not relieve the Surety Company of any its obligations to the Birmingham Airport Authority, Birmingham, Alabama, as set forth in said Surety Company's bond dated the _____ day of _____ 20____

IN WITNESS WHEREOF:

The Surety Company has hereunto set its hand and seal this _____ day of _____, 20_____.

Subscribed and sworn to before me this the _____ day of _____, 20_____

Surety
By: _____ (Seal)
Name: _____
Title: _____

[NOTARY SEAL]

Notary Public: _____
My Commission Expires: _____

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SECTION 00 19 30
FINAL RELEASE FORM

KNOW ALL MEN BY THESE PRESENTS, that the undersigned, for and in consideration of the payment of the sum of _____ DOLLARS (\$____). Paid by the Birmingham Airport Authority (hereinafter referred to as "Owner"), receipt of which is hereby acknowledged as total and complete compensation for performance of the below-described Contract, does hereby fully and completely discharge and release the Owner from and waives any and all debts, accounts, promises, damages, liens, encumbrances, causes of action, suits, bonds, judgments, Claims and demands whatsoever, in law or in equity, which the undersigned ever had, now has or might hereafter have on account of labor performed, material furnished or services rendered, directly or indirectly, for the Contract between the parties, dated _____, 20____, known as **"Birmingham-Shuttlesworth International Airport – Taxiway Alpha Emergency Patching,"** except for those Claims, disputes and other matters arising out of or relating to said Contract which have been raised by written demand in accordance with the Contract Documents prior to this date and identified by the Contractor as unsettled in the final Application for Payment and are in court litigation in accordance with the Contract Documents

The undersigned further covenants that all Subcontractors, suppliers, material men and any or all other persons supplying material, supplies, services, or labor used directly or indirectly in the prosecution of the Work provided for in the Contract have been paid in full.

The undersigned shall maintain in full force and effect the provisions of the Contract Documents respecting the guaranty against defective Work, and any other special guaranties required by the Contract Documents, for the terms provided in the Contract Documents, which terms shall begin to run from the date specified in the Contract Documents.

The undersigned represents and warrants that the statements contained in the foregoing Release are true and correct.

IN WITNESS WHEREOF,

I hereunto set my hand and seal this _____ day of _____, 20____

WITNESS:

Contractor

By: _____ (Seal)

Name: _____

Title: _____

[NOTARY SEAL]

Notary Public: _____

My Commission Expires: _____

END OF SECTION

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CONTRACTOR'S GUARANTEE

That should any defects develop in the Work, during the one (1) year guarantee period as required by the Contract Documents, beginning on the date of Final Acceptance by the Owner, due to improper materials, workmanship or arrangement, or defective machinery and equipment, the Contractor warrants and covenants that the defects shall be made good by the Contractor, at the time specified by the Owner and that any other Work affected in correcting such defects shall also be made good, all at the Contractor's sole cost and expense.

Name of Contractor

Title: _____

Date: _____

State of : _____
County of: _____

I, the undersigned, a Notary Public in and for said County in said State, do hereby certify that
 _____ (Name), whose name as
 _____ (Title) of _____ (Contractor), a
 _____ (Corporation/Partnership/LLC), is signed to the foregoing instrument and who is known to me,
 acknowledged before me on this date that being informed of the contents of said instrument, he,
 as such officer and with full authority, executed the same voluntarily for and as the act of said
 _____ (Corporation/Partnership/LLC) on the Day the same bears date.

Given under my official hand and seal this the _____ day of _____, 20_____.

[NOTARIAL SEAL]

Notary Public:

My commission expires: _____

SUBCONTRACTOR'S GUARANTEE

STATE OF ALABAMA)
COUNTY OF _____)

Before me, the undersigned authority, personally appeared
_____ who, being duly sworn, deposes and says as follows:

The s/he is the duly authorized representative of _____
(Name of Subcontractor) being its _____ (Owner) (Partner) (President or
other Officer) and such has the full authority to execute this Subcontractor's Guarantee.

That the said Subcontractor has performed certain Work for
_____, the General Contractor for the Owner, under project, entitled,
Birmingham-Shuttlesworth International Airport – **Taxiway Alpha Emergency Patching**, which said Work has now
been completed by the Subcontractor in its entirety.

That in consideration of the partial payments heretofore made by the Contractor to the Subcontractor, and in
consideration of the final payment yet to be made, the Subcontractor, and in consideration of the final payment yet to
be made, the Subcontractor does hereby warrant to the Contractor that all labor, Work, materials and equipment
furnished, supplied and performed under the said Subcontractor, are in strict accordance with the Contract Documents.

That should any defects develop in the Work during the guarantee periods as required by the Contract
Documents, all from and date of Final Acceptance by the Owner, due to improper materials, workmanship or
arrangement, or defective machinery and equipment, the Subcontractor warrants and covenants that promptly upon
notice from the Contractor, the defects shall be made good by the Subcontractor at the time specified by the Contractor,
and that any other Work affected in correcting such defects shall also be made good, all at the Subcontractor's sole
cost and expense.

SUBCONTRACTOR:

Name of Subcontractor
By: _____
(Authorized Representative)
Name: _____
Title: _____
Date: _____

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**SECTION 00 19 50
ASSIGNMENT OF WARRANTIES TO OWNER**

ASSIGNMENT OF WARRANTIES TO OWNER

THIS ASSIGNMENT is made and entered into this _____ day of _____, in the year 20____, by and between the BIRMINGHAM AIRPORT AUTHORITY, hereinafter called the "Owner", and _____, hereinafter called the "Contractor".

WITNESSETH, that the Contractor has performed Work for the Owner under AIP Project NO AF-0645; BAA NO. N/A (the "Contract"), for the Project entitled Birmingham-Shuttlesworth International Airport – **Taxiway Alpha Emergency Patching**;

WITNESSETH, that and in connection with such Project, certain materials, products, equipment and systems have been purchased by Contractor from third party manufacturers and suppliers and incorporated into the Work, and Contractor is required by the Contract to assign the same to the Owner.

NOW, THEREFORE, in consideration of the premises and other good and valuable consideration to the Contractor set forth in the Contract, the Contractor hereby:

1. Assigns to Owner any and all warranties with regard to any materials, products, equipment and systems purchased from third party manufacturers or suppliers and incorporated into the Work.
2. Delivers to Owner any and all operating and maintenance information for all such materials, products, equipment and systems purchased from third party manufacturers or suppliers and incorporated into the Work that will require future care, maintenance and/or cleaning by the Owner, including, but not limited to the following, if applicable, shop drawings, equipment manufacturer's schematics, test and balance reports, fire protection hydraulic calculations, operation and maintenance instructions, service and maintenance contracts, wiring diagrams and electrical panel schedules operating manuals, drawings and other material received from such third party manufacturers or suppliers.

CONTRACTOR:

Name of Contractor

By: _____

(Authorized Representative)

Name: _____

Title: _____

Date: _____

END OF SECTION

SECTION 00 20 00
PROTECTION OF PERSONS AND PROPERTY

1. SAFETY PLAN

- 1.1** The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and implementing and monitoring a safety program in connection with the performance of the Contract including but not limited to those requirements in this Section 002000. The Contractor shall submit to the Owner a copy of its safety plan within ten (10) Days of issuance of the Notice to Proceed. Contractor's Safety Plan must, at a minimum, incorporate the provisions set forth in Section 002010 (Safety Plan for the Air Operations Area), if applicable; Appendix (FAA AC 150/5370-2G Operational Safety on Airports During Construction); and Section 002030 (Birmingham Airport Authority Contractors Airport Security and Operational Regulations). The Contractor is responsible for enforcing the observance of and compliance with the Safety Plan by the Contractor, its Subcontractors, and their respective employees, agents and Contractors.
- 1.2** In the event the Contractor fails to initiate, maintain, suspend and monitor the safety of its operations during the performance of the Work, including the operations of its Subcontractors, Suppliers and any others for whom the Contractor is responsible, then the Owner may, without reservation, pursue any rights or remedies against the Contractor that are available, under this Contract or by law, including withholding of payment.

2. CONTRACTOR'S RESPONSIBILITY FOR SAFETY

- 2.1** The Contractor shall take all reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:
- 2.1.1** Employees and other persons who may be affected thereby;
 - 2.1.2** The Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors; and
 - 2.1.3** Other property at the Work site or adjacent thereto, such as trees, shrubs, lawns, walks, Pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
- 2.2** The Contractor shall comply with applicable laws, ordinances, codes, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.
- 2.3** The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying Owners and users of adjacent sites and utilities.
- 2.4** When use or storage of hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

- 2.4.1** In the event the Contractor encounters on the site material reasonably believed to be hazardous material, such as asbestos or polychlorinated biphenyl (PCB), the Contractor shall immediately stop Work in the area affected and verbally report the condition to the Owner and Engineer followed by notification in writing. The Work in the affected area shall not thereafter be resumed except by written agreement between the Owner and Contractor if in fact the material is hazardous and has not been rendered harmless. The Work in the affected area shall be resumed if the material is not hazardous, or if it has been rendered harmless, by written agreement of the Owner and Contractor, or in accordance with final determination by the Engineer.
- 2.4.2** The Contractor shall not be required pursuant to this Section 002000 to perform without its consent any Work relating to hazardous materials
- 2.4.3** To the fullest extent permitted by law, and on the condition that Contractor shall have followed the procedures set forth in this Subsection 2.4, the Owner shall indemnify and hold harmless the Contractor, OAR, Engineer, Engineer's consultant's and agents and employees of any of them from and against Claims, damages, losses and expenses, including but not limited to attorney's fees and expenses, arising out of or resulting from performance of the Work in the affected area if in fact materials encountered are hazardous, such as asbestos or polychlorinated biphenyl (PCB), and have not been rendered harmless, provided that such Claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefore, but only to the extent caused solely by negligent acts or omissions of the Owner, anyone directly or indirectly employed by the Owner or anyone for whose acts the Owner may be liable. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in Subsection 2.4.2.
- 2.5** The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property for which it is responsible under the Contract Documents caused in whole or in part by the Contractor, a Subcontractor or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible, except damage or loss attributable to acts or omissions of the Owner, OAR or Engineer or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations to indemnify in Section 002800 (Insurance and Bond Requirements; Indemnification).
- 2.6** The Contractor shall designate a responsible member of the Contractor's organization on the Work site whose duty shall be the safety of persons and property as provided herein. This person shall be the Contractor's Superintendent unless otherwise designated by the Contractor in writing to the Owner, OAR and Engineer.
- 2.7** The Contractor shall not load (for example, by delivery of materials, structural or physical loads) or permit any part of the Work, construction or site to be loaded so as to endanger the safety of the Owner, OAR, Engineer, Contractor or their agents, representatives or employees.

- 2.8** The Contractor shall protect adjoining private or municipal property and shall provide barricades, temporary fences, and covered walkways required to protect the safety of passers-by, as required by prudent construction practices, local building codes, ordinances or other laws, or the Contract Documents.
- 2.9** The Contractor shall take all reasonable precautions to protect and keep the Work, materials and equipment free from injury or damage from rain, wind, storms, frost or heat. If extreme adverse weather conditions prevent the Contractor from continuing operations safely in spite of having implemented weather precautions, the Contractor shall cease Work and notify the Owner and the Engineer of such cessation. The Contractor shall not permit open fires on the Project site.
- 2.10** The Contractor shall, at its sole cost and expense, promptly repair any damage or disturbance to walls, utilities, sidewalks, curbs and the property of third parties (including municipalities) resulting from the performance of the Work, whether by Contractor or by its Subcontractors at any tier. The Contractor shall maintain streets affected by the Work in good repair and traversable condition.

3. EMERGENCIES

In an emergency affecting the safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time Claimed by the Contractor on account of an emergency shall be determined as provided in Section 001000 for Extra Work.

4. 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 in high.

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, latest edition, Marking of Paved Areas on Airports and as set forth in this Section 002000.

The Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stock piles, and Contractor's 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, latest edition, Operational Safety on Airports During Construction Activity.

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

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

Open-flame type lights shall not be permitted within the Air Operations Areas of the Airport.

5. USE OF EXPLOSIVES

The use of explosives is prohibited on this project.

6. PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE

The Contractor shall be responsible for the preservation of all public and private property affected by the Work, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer has witnessed or otherwise referenced their location. The Contractor shall not move any such monuments or markers until directed to do so by the Engineer.

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 its or its Subcontractors' or Suppliers' manner or method of executing the Work, or at any time due to defective Work or materials, and the Contractor shall not be released from such responsibility until the Work shall have been completed and Finally Accepted by the Owner, unless expressly set forth herein to the contrary.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work, or in consequence of the non-execution thereof by the Contractor or its Subcontractors or Suppliers, the Contractor shall restore, at its 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 the Contractor shall make good such damage or injury in a manner acceptable to the Owner of such property.

7. SEISMIC SAFETY

In the performance of design services, the Consultant agrees to furnish a building design and associated construction specification that conform to a building code standard that provides a level of seismic safety substantially equivalent to standards as established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their building code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety. At the conclusion of the design services, the Consultant agrees to furnish the Owner a "certification of compliance" that attests conformance of the building design and the construction specifications with the seismic standards of NEHRP or an equivalent building code.

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.

8. SANITARY, HEALTH, AND SAFETY PROVISIONS

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of its 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 over sanitary, health and safety in connection with the Work and the Project.

Attention is directed to Federal, state, and local laws, rules and regulations concerning construction safety and health standards. The 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.

9. PUBLIC CONVENIENCE AND SAFETY

The Contractor shall control its operations and those of its Subcontractors and all Suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall not interfere with the free and unobstructed movement of aircraft and vehicular traffic with respect to its own operations and those of its Subcontractors and all Suppliers in accordance with the provisions of this Section 002000 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 001200.

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SECTION 00 20 30
CONTRACTOR SAFETY AND SECURITY PROGRAM



Contractor Safety and Security Program

INTRODUCTION

Purpose Statement:

To provide contractors with a clear and concise understanding of the safety requirements and responsibilities while working at the Birmingham – Shuttlesworth International Airport as well as to reduce exposures that cause personal injury, property damage, and liability losses due to construction, renovation and demolition of Birmingham Airport Authority (BAA) owned buildings and facilities.

Objectives

The major objectives of the Contractor Safety Program are to:

- Inform contractors of their responsibilities when working on BAA property.
- Protect employees, tenants, passengers, property, and the environment from potential hazards.
- Comply with all federal and local safety and environmental regulations.

Contractor Responsibilities

- Contractors are expected to implement their own environmental health and safety programs.
- If contracted by a tenant of the Birmingham Airport Authority, the Contractor shall ensure that the BAA Tenant Alteration Form has been completed and approved.
- Prior to starting a project, each contractor is required to review the work site with a BAA representative and identify hazards that may occur while performing the job.
- The Contractor shall maintain on-site and make accessible an approved copy of the BAA Tenant Alteration Form for the duration of the project.
- Prior to the start of the project, the contractor shall contact their BAA Project Manager to ensure that all pertinent information for the project including permits, floor plans, utility information and forms have been approved.
- The contractor shall ensure proper environmental health and safety precautions are followed in accordance with the Occupational Safety and Health Administrations (OSHA) and the Environmental Protection Agency's (EPA) Code of Federal Regulations (CFR).
- The contractor shall ensure individuals working at the site are trained and are aware of potential hazards. Contractors shall also ensure that these individuals are provided with proper safety equipment to prevent accidental injury in accordance with OSHA's CFR.
- The contractor shall ensure all personnel follow the guidelines of OSHA, EPA, and all BAA policies, in addition to any guidelines of the jurisdiction(s) in which the operations will be performed.
- The Contractor is required to attend a Pre-Construction meeting as arranged by the BAA Project Manager.
- The Contractor shall ensure that any changes to the approved scope of work is submitted in writing to the BAA Project Manager and that written approval is received before the work is performed.
- The Contractor shall ensure that any additional charges, beyond those defined either through contract or agreed upon proposal, are approved in writing by the BAA Project Manager. Failure to obtain pre-approval for additional charges may result in non-payment.

Inspection Authority

- Birmingham Airport Authority Staff reserves the right to inspect any worksite at any time to ensure compliance with all rules and regulations as set forth in this document. Failure to adhere to any of the rules and regulations in this document could result in the stoppage of the project until the violations are corrected. Any violations resulting in fines from any agency will be directed to the General Contractor.

SECTION 1 INSURANCE REQUIREMENTS

Prior to start of work and for the duration of the project the Contractor and any subcontractors shall maintain the minimum insurance coverage as required by the Birmingham Airport Authority. Minimum Insurance requirements will be determined by the project scope.

- The Authority shall be notified two (2) weeks prior to cancellation of insurance. The Authority cannot protect the structure against fire, vandalism, theft, or hazards, which may affect the salvage value and makes no warranty in this regard.
- The BAA withholds the right to increase coverage requirements based on project specifications, duration, and potential loss.

SECTION 2 SECURITY REQUIREMENTS

In accordance with the Birmingham Airport Authority (BAA) policies and Federal regulations (49 CFR 1542), all airport workers (employees, tenants, contractors, etc.) must obtain and display an identification badge issued by the BAA Badge Office when working on airport property. The Birmingham - Shuttlesworth International Airport is a controlled access facility. **NO PERSON** may be within a defined Restricted Area or the Airport Operating Area (AOA) without proper Security Identification Display Area (SIDA) badge. SIDA badges are issued through the BAA Badging Office.

Personnel intrusions or incidents may result in detention of personnel, fines per violation, or arrest of the person(s) under applicable local, state or federal statutes. Any incidents which cause the BAA to be in violation of federal security regulations may subject the BAA to fines from the Transportation Security Administration (TSA). Any fines levied against BAA due to the actions of a contractor will be passed along to the contractor.

PERSONNEL ID REQUIREMENTS

All persons working on the AOA or in the Restricted Areas of the Airport are required to have an airport issued SIDA badge displayed at all times above waist level on their outermost garment of clothing. The badge is the property of the BAA and will be surrendered to the badge holder's employer or Airport Operations within 24 hours of termination of employment or completion of contract.

General Contractor Requirements:

- Ensuring that all persons within the construction area possess the proper Airport issued ID badge.
- Ensuring a minimum of one person on the job site that has undergone AOA Security training and has been issued a SIDA badge with escort privileges.

SIDA Badge:

- The employee must fill out a Criminal History Records Check/Badge Request form.
- Upon approval, the employee must bring two (2) forms of acceptable identification and \$60 to the Airport Badge Office. Fees are to be paid at the time of service and are non-refundable.
- The employee will be fingerprinted and subject to a Security Threat Assessment (STA) by Transportation Security Clearinghouse (TSC). Please note the results of the STA may take up two (2) weeks to be returned to the Airport.
- Each employee issued a SIDA badge will be required to successfully complete a computerized training session that will take approximately 1 ½ hours to complete.

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Birmingham, Alabama

No Access ID Card:

- The employee must fill out a No-Access ID Card Request form.
- Upon approval, the employee must bring two (2) forms of acceptable identification and \$25 to the Airport Badge Office. Fees are to be paid at the time of service and are non-refundable.
- The employee will be subject to a STA performed by the TSC. Please note the results of the STA may take up to two (2) to be returned to the Airport.
- Each employee issued a No Access ID Card will be required to successfully complete a computerized training session that will take approximately 25 to 30 minutes to complete.

Failure to ensure proper ID on all employees while on the AOA or in Restricted Areas of the Airport could result in fines of up to \$10,000.

Birmingham Airport Authority Operations Staff will conduct routine patrols of the construction site to ensure compliance with the personnel ID regulations. Any violations resulting in fines from any agency will be directed to the General Contractor.

SECTION 3 VEHICLE ID REQUIREMENTS

Absolutely no private vehicles are allowed in the Secured Areas or in the AOA construction areas.

Commercially registered company vehicles only are allowed in the AOA construction areas and must meet the following conditions:

- A company logo affixed to the side of the vehicle. Logos should be visible with characters of contrasting color and easy to read.
- The vehicle must be listed on the insured vehicle listing and covered by the insurance limits as required by the contract.
- All persons within the vehicle must comply with the Personnel ID requirements.
- All vehicles must either be lighted with a flashing amber beacon or flagged during daylight hours and lighted during hours of darkness or reduced visibility in accordance with AC 150/5210-5B.

Flags should be 3 foot square and have a checkered pattern of International Orange and White square at least 1 foot on each side.

Vehicle lighting should be an amber-flashing beacon visible from any direction including the air. Vehicle lighting should be low-intensity with a minimum effective intensity range in the horizontal range of 40 candelas but not more than 400 candelas.

- All persons operating equipment or driving a vehicle inside an AOA construction area must undergo BAA Airfield driver training. Airfield driver training must be scheduled through the BAA Operations Department.
- Unescorted driving privileges outside of the construction areas will be granted to only those persons possessing an Airport Security ID badge and having successfully completed the BAA driver-training program.
- The BAA driver- training program is an Interactive training program that utilizes a touch screen monitor and video segments that require the user to correctly answer a series of questions before moving onto the next segment.
- Drivers must remain clear of the Movement Areas of the AOA at all times.
- Penalties for non-compliance with BAA and FAA driver requirements: Non-movement area violations:
 - 1st offense – The violator will receive a written warning and must re-visit the BAA driver training program.
 - 2nd offense – The violator's driving privileges will be suspended for 30 days along with the completion of the

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BAA driver training program.

3rd offense – The violator's driving privileges will be permanently revoked. Movement area violations:

1st offense – The violator's driving privileges will be permanently revoked along with a possible fine of up to \$10,000.

- Contractors that have an operational need to drive on the Movement area of the AOA (Runways and Taxiways) must successfully complete supplemental BAA Driver Training covering ground vehicle radio communications procedures on the movement area.
- Vehicles authorized to operate on runways and taxiways must be equipped with an amber colored rotating beacon or strobe light and a two-way radio capable of transmitting and receiving on FAA ATCT ground control (121.70) and tower control (119.90) frequencies.
- Vehicles not authorized or not properly equipped to operate on the movement area must be escorted by BAA Operations personnel.

SECTION 4 WORK AREA SECURITY (PUBLIC PROTECTION)

All contractors are responsible for the security of their tools, equipment, storage, etc. The Authority provides no protection for loss.

Contractor Responsibility

- Each contractor and/or subcontractor is responsible for open gates and doors, fallen fences, etc. Work area and AOA security must be maintained.
- The contractor is responsible for limiting access through the "contractors" gates to only those individuals displaying the proper airport issued ID badge and have an official need to be there.
- The person responsible for the security of any open AOA doors or gates must possess an Airport issued Security ID badge.
- All construction work areas outside the airport security fencing should provide protection to the public in the form of work area fencing. This fencing should be a minimum of 6 feet high supported as required to provide adequate public protection. All fencing shall be installed as directed by the BAA Engineer.

SECTION 5 TERMINAL DELIVERIES

The roadways, both upper and lower levels, at the curb of the terminal building are restricted. No vehicle may be left unattended at these locations for any purpose unless prior approval is gained from the Airport Security Coordinator.

When a contractor has a need to take delivery of materials, supplies, etc. at the airport, the following procedures should be followed:

- Contact the Airport Operations supervisor at 205-599-0518 at least 48 hours prior to the delivery to make arrangements
- Deliveries should be made to the ramp via field gate #27 at the end of Tower view Dr.
- BAA Operations will meet delivery vehicle and escort same to a pre-determined delivery point
- Contractor must have a badged representative meet the delivery at the delivery point and assume the SIDA escort of the delivery personnel
- Once delivery has been completed, contractor should contact BAA Operations at 205-599-0519 to request an escort for the delivery vehicle to exit the field
- All vehicles and persons entering the Secured Area are subject to search.
- No firearms, weapons or other prohibited items are allowed in the Secured Area. Violators are subject to fines.

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Deliveries will only be allowed on the curb in front of the terminal if the item delivered is too large to fit on the service elevator. In that case:

- Contractor must contact the Airport Operations supervisor at 205-599-0518 at least 48 hours prior to the delivery to make arrangements
- Delivery must be made at night after all flight activity has ceased. Typically, between the hours of midnight and 4:30 am
- Contractor must arrange for an attendant to remain with the delivery vehicle for the duration of the time it is located on the curb.
- Vehicle may remain on the curb only for the duration of the unloading process. Once the unloading is completed, the vehicle must leave the curb area
- All vehicles approaching the curb are subject to search.

SECTION 6 AOA SAFETY

Runways, Taxiways and Aprons have Safety Areas associated with them. These are defined surface areas prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway, taxiway or apron. Construction activities within these areas require extra ordinary precautions and must be accomplished in accordance with AC 150/5370 *Operational Safety on Airports During Construction*. Listed below are several examples but should not be taken as a complete listing:

- Runway Ends – Construction equipment shall not penetrate the approach surface of any active runway without prior written permission from BAA and the appropriate NOTAM issued.
- Runway Edges – Construction activities normally shall not be permitted within 250 feet of the runway centerline. However, construction may be allowed closer than 250 feet of the runway centerline on a case-by-case basis with approval of BAA, appropriate NOTAM issued and coordination with FAA and users.
- Taxiways and Aprons – Normally construction activity set-back lines are located at a distance measured from the taxiway or apron edge line of 25 feet plus one half the wingspan of the largest predominant aircraft normally using that area.
- Construction activity may be permitted up to the edge of the taxiway or apron in use provided that the activity is approved by the BAA and coordinated with the FAA and its users; NOTAMS are issued, marking and lighting provisions are implemented; and it is determined the height of equipment and materials is of a safe height as determined by BAA.
- Runway or Taxiway Closures – No runway, taxiway, apron, or airport roadway shall be closed without prior written approval from a BAA authorized representative. The coordination of Runway or Taxiway closures will be made through the BAA Project Manager and the Airport Operations Department through the Request for Facilities Shutdown form. Temporary runway or taxiway closures require 48-hour notice. Extended runway closures shall be marked by lighted yellow X's placed on the runway numbers. Temporary taxiway closures require either lighted barricades or an "X" at the entrance of the taxiway.
- Markers shall be of the size and description as required by AC 150/5340 *Standards for Airport Markings* and the BAA Engineer.
- The Contractor must arrange for an inspection by the BAA Operations Department of any pavement area that has been closed for work, on or adjacent thereto, or that has been used for a crossing point or haul route by the Contractor prior to opening.
- Stockpiled Material – Extensive stockpiled materials will not usually be permitted within construction activity areas. In instances where stockpiled material or equipment are unavoidable the material or equipment shall be marked and lighted during hours of restricted visibility and darkness.
- Maximum Equipment Height – The guiding criteria involving FAR Part 139 certificated airports and grant

agreements airports is that all construction plans require direct coordination with the Airports District, field, or regional office. Notice of proposed construction shall be submitted to the FAA Airports District Office for review prior to the placement of construction equipment on airports. The Contractor shall notify and obtain BAA approval at least 48 hours prior to operation of any crane or other construction equipment at an elevation higher than 35 feet. Equipment exceeding 35 feet in height shall be flagged during daylight hours and periods of good visibility and lighted or lowered during nighttime hours or during periods of poor visibility. Whenever the Airport's beacon is operational all equipment exceeding 35 feet in height must be lighted or lowered. A listing of all expected pertinent equipment needed for the project and the corresponding height of that equipment shall be submitted to the BAA Engineer 30 days prior to the start of construction. Any addition to the list of equipment requires at least 48-hour notice to the BAA Engineer.

- Proximity of Construction Activity to Navigational Aids – Construction activity in the vicinity of navigational aids requires special consideration. The effect of the activity and its permissible distance and direction from the aid must be evaluated in each instance. A coordinated evaluation by the BAA and the FAA is necessary. Technical involvement by FAA Regional Airports Office, Air Traffic Control, FAA Flight Standards, and FAA Airway Facilities specialists is needed as well as construction engineering and management input. Particular attention will be given to stockpiling materials as well as to the movement and parking of equipment, which may interfere with line-of-sight from the Tower or interfere with electronic emissions. (See AC 150/5300-2D, *Airport Design Standards – Site Requirements for Terminal Navigational Facilities*, current edition, for critical areas of NAVAIDS) Interruption of FAA navigational aids due to unapproved cable cuts or damage to FAA equipment by the Contractor may result in a \$10,000 fine imposed by the FAA.
- Airport Access Gate Control – Prior to the start of each project on the AOA a specific airfield security gate will be designated by the BAA for general contractor access to and from the construction site. Contractor's vehicles, including those of suppliers, and sub-contractors are required to use this gate only unless designation is made in writing by the BAA Director of Operations authorizing the use of a different gate. A daily record is required of all persons entering through the designated construction gate onto the AOA and must be retained for the duration of the project.
- Contractors scheduling work outside of normal business hours, on weekends or on holidays are required to coordinate their work activity with the BAA Operations Supervisor, 599-0519, a minimum of 48 hours in advance.
- Under special circumstances where work is to be accomplished within airport property but access to the AOA is not required, permission may be granted by the BAA Director of Operations to isolate the construction area by use of project fencing, physical barricades with accompanying security guard stations or other means of defining the construction area limits beyond which no access by construction vehicles or personnel is allowed. In such circumstances permission may be granted to deviate from the normal access control requirements set forth in the paragraph above, and personnel identification procedures in Paragraph B2 herein in which case security personnel employed by the contractor and approved by the Birmingham Airport Authority will be utilized for access and site security control. In each such instance the Birmingham Airport Authority Rules and Regulations and other applicable Airport Security Regulations remain applicable.
- Marking and Lighting of Closed or Hazardous Areas - The Contractor shall provide prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles. Hazard marking and lighting must restrict access and make specific hazards obvious to pilots, vehicle drivers and other personnel. Barricades, traffic cones (weighted or sturdily attached to the surface), or flashers are acceptable methods used to identify and define the limits of construction and hazardous areas. The Contractor shall provide a 24-hour contact for emergency maintenance of airport hazard lighting and barricades.
- Hazardous areas, in which no part of an aircraft may enter, are indicated by use of barricades. Barricades shall be highly reflective; marked with diagonal, alternating orange and white stripes and supplemented with red flashing lights for hours of darkness or reduced visibility. Barricades used on and around runways, taxiways or associated safety areas shall be as low as possible to the ground; of low mass; easily collapsible upon contact with an aircraft or any of its components;

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and weighted or sturdily attached to the surface to prevent displacement from prop wash, jet blast, wing vortex or other surface wind condition. If affixed to the surface, they must be frangible at ground level or as low as possible not to exceed 3 inches above the ground. Barricades should be placed no greater than 20 feet apart.

- Notice to Airmen (NOTAM) – The BAA shall provide information on closed or hazardous conditions to the local Air Traffic Control Facility and FAA Flight Service Station so that a NOTAM can be issued.
- Foreign Object Debris (FOD) Management – Debris, waste and loose materials commonly referred to as FOD is capable of causing damage to aircraft landing gears, propellers and jet engines. FOD shall not be allowed on any portion of the airfield, building or construction site where acts of God, inattention or negligence may cause its relocation to any aircraft area. The Contractor must continuously remove all materials tracked onto an aircraft movement area during the construction project. If it should become necessary for the Airport Authority to remove debris left behind by a contractor, the General Contractor shall be billed at a rate of 2.5 times the actual cost of cleanup.
- Temporary Runway Threshold Displacement – Construction activity in a runway approach area may result in the need to partially close a runway or displace the existing runway threshold. In either case the threshold shall be located in accordance with AC 150/5300-13 *Airport Design*. The determination to partially close a runway or to displace an existing runway threshold will be made by the BAA and must be coordinated with the Airports Districts Office, FAA Airways Facilities, Air Traffic Control, FAA Flight Service Station and users. If any NAVAID system must be shutdown coordination with the BAA Operations Department must be accomplished with as much notice as possible.

Limitations on Construction

- Open flames are prohibited unless adequate fire and safety precautions have been taken. Contractor shall comply with NFPA regulations.
- Stockpiling of materials shall be constrained in a manner to prevent movement resulting from jet blast or wind conditions in excess of 10 knots.
- Contractor's storage and staging area: The contractor shall store all materials and equipment (when not in use) in the designated areas. Material will be stored on blocking clear of contact with the ground.
- Open trenches, excavations and stockpiled material at the construction site shall be prominently marked with barricades marked with diagonal orange and white stripes with flashing red light units (acceptable and approved by the FAA and BAA) during hours of darkness and or restricted visibility.
- The Contractor shall not use any access or haul roads other than those approved by the Airport. Special attention should be paid to ensure that all Emergency Response vehicles have the right of way and that access is not impeded at any time.
- The contractor shall be responsible for the removal and/or disposal of hazardous waste generated from the project. Hazardous waste generated from the project must be removed and disposed of in accordance with federal and local regulations.
- All contractors performing inspections, construction, and repairs at the Birmingham - Shuttlesworth International Airport are to comply with the requirements of this manual. Failure to adhere to these requirements may result in an immediate shutdown of the work site and a breach of contract with the Birmingham Airport Authority.

SECTION 7 ESCORT REQUIREMENTS

Vehicles not authorized to operate on the movement areas of the AOA must be escorted. The coordination of escorts is accomplished through the BAA Project Manager and Airport Operations Department through the completion of the BAA Request for Work in Safety Area. The following restrictions shall apply to Vehicle escorts:

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- No vehicles will be escorted onto the movement areas during times of peak aircraft traffic.
- No more than 2 vehicles shall be escorted at one time unless there is an escort vehicle in lead and in trail with the convoy.

Unauthorized entry or crossing of active taxiways or runways could result fines to the Contractor of up to \$10,000.

SECTION 8 DRESS CODE

An employee's uniform and/or company identifying clothing aid in the identification of outside Contractors enhance Airport security and promote the professional image of the Airport.

The Contractor shall ensure that:

- All employee's shirt/blouse/vest/jacket/coverall have their employer's company identifying logo or company name on the garment.
- Clothing shall be neat and clean at the start of each shift and worn in the normal manner.
- Shirts will normally be buttoned and shirttails tucked in.
- Pants will be worn at the waist.
- Clothing must not have statements, pictures, or language that is racial, obscene, or promotes negative connotations.
- Footwear must be appropriate for the task being performed.

SECTION 9 BARRICADING AND FENCING

The contractor is responsible for maintaining a safe and accessible path-of-travel for all pedestrians, including those with disabilities, around and/or through construction sites. Barricades act as warning devices, alerting others of the hazards created by construction activities, and should be used to control traffic, both vehicular and pedestrian, safely through or around the work site.

Barricades and signage shall be used wherever necessary for the physical protection of people or property.

The contractor shall:

- Erect and maintain for the duration of the Contract proper barricades including fencing material, traffic cones, A-frames, caution tape and temporary curb ramps complying with all access codes and regulations at all closed crosswalks and existing closed curb ramps.
- Obtain all applicable permits required by the regulations.
- Furnish, erect, and maintain all necessary signs, barricades, lighting, fencing, bridging, and flaggers that conform to the requirements set forth by the BAA Project Manager.
- Ensure that no construction materials be stored and/or placed on the path-of travel.
- Maintain the construction barriers in a sound, neat, and clean condition.
- Not occupy public sidewalks except where pedestrian protection is provided.
- The Contractor shall not obstruct free and convenient approach to any fire hydrant, alarm box, or utility box.
- Remove barriers and enclosures upon completion of the work in accordance with applicable regulatory requirements and to the satisfaction of the owner.
- Provide protection for pedestrians consistent with all local and federal codes, including the Americans with Disabilities Act.

SECTION 10 CONFINED SPACE ENTRY

It is the responsibility of the contractor performing confined space entry activities at the Birmingham – Shuttlesworth International Airport to protect workers from toxic, explosive, or asphyxiating atmospheres, and from engulfment when working in and around confined spaces. Types of confined space entries include, but are not limited to: Manholes, HVAC systems, crawlspaces, pits, and tanks.

The contractor shall:

- Identify permit-required confined spaces.
- Evaluate each confined space for potential hazards.

Control potential hazards with the following measures:

- Mechanical - Use proper lockout/tag
- Procedures when needed to prevent hazards within the confined space.
- Ventilation - If exposed to harmful vapors or an oxygen deficient atmosphere exists; a ventilation fan shall be used for the duration of the job.
- To prevent an explosion, do not use equipment that may cause flame or sparks in an oxygen- enriched atmosphere.
- Personal protective equipment (goggles, gloves, dust mask, respirator) shall be worn when a potential hazard exists.
- Coordinate entry operations with the BAA Project Manager when employees are working in or near the area.
- Inform the BAA Project Manager of entry procedures that will be followed and of any hazards identified or created.
- Provide documentation of their company's entry procedures to the BAA Project Manager and the BAA Operations Department before work begins.

In the event of an emergency requiring entry rescue services, the attendant shall immediately CALL 911. In the event of an emergency that requires non-entry rescue services the attendant shall immediately call the BAA Operations Center at (205) 599-0519.

SECTION 11 INDOOR ENVIRONMENTAL QUALITY

It is the contractor's responsibility to minimize the impact construction-related activities have on indoor environmental quality at the Birmingham – Shuttlesworth International Airport.

Prior to performing construction-related activities including repair projects, contractors shall eliminate or minimize any potential contaminant/physical agent exposures by implementing the following procedures:

- Maintain good housekeeping habits to contain dust and construction debris. Use a dust collector or filtered vacuum to minimize re-circulation of contaminants.
- Implement engineering controls; such as dilution or local exhaust ventilation and isolation of mechanical systems.
- Install critical barriers made of polyethylene sheeting on doors, windows, vents, etc. in order to isolate the specific work area.
- To minimize dust, use wet methods when appropriate.
- Use the least toxic material suitable for the application (for example, latex paint rather than oil- based)
- Communicate with BAA Project Manager to implement effective strategies (for example, working off hours) to minimize occupant exposure.
- Relocate sources of contamination (for example, a generator or tar kettle) away from the building air intake.

SECTION 12 LOCKOUT / TAGOUT

It is the contractor's responsibility when performing lockout/tagout activities at the Birmingham -- Shuttlesworth International Airport to ensure all persons potentially affected by de-energizing or re-energizing of building systems are properly protected and notified.

Hazardous energy must be isolated or locked and tagged out before servicing and/or maintenance activities are performed. The following types of hazardous energies are typically found at the Birmingham -- Shuttlesworth International Airport:

Electrical
Pneumatic
Mechanical
Thermal
Hydraulic
Chemical

The contractor is responsible for the following:

- Having a lockout/tagout program prior to performing work.
- Communicating their lockout/tagout program with the BAA Maintenance Department.
- Coordinating with BAA representatives prior to performing lockout/tagout activities.
- Providing their own lockout/tagout equipment that meet OSHA standards.
- Performing lockout/tagout activities in accordance with OSHA standards and the BAA Lock-Out / Tag-Out program.
- Following special procedures for jobs requiring multiple lockout devices and those involving shift or personnel changes.

SECTION 13 FALL PROTECTION

Contractors working at elevated locations must provide their employees with fall protection. Potential activities requiring fall protection may include working on:

Portable and fixed ladders
Aerial lifts
Scaffolds
Roofs
Elevated work locations and platforms

Contractors have the responsibility to:

- Reduce the hazards associated with falls.
- Control fall hazards first through engineering controls.
- Institute personal fall arrest systems, administrative controls and training when engineering controls are not feasible.
- Have a formal fall protection program in accordance with OSHA requirements.
- Have the necessary fall protection equipment to safely perform the job.
- Have workers properly trained in the use of fall protection equipment.

SECTION 14 HOT WORK PERMIT

It is the contractor's responsibility to obtain a hot work permit when performing hot work activities at the Birmingham - Shuttlesworth International Airport. The hot work permit is designed to reduce the potential of an uncontrolled ignition of materials in a hot work area.

Hot work is any activity that creates heat, flame, sparks, or smoke. Examples of hot work include but are not limited to:

- Brazing
- Cutting
- Grinding
- Soldering
- Gas or Arc welding
- Torch-applied roofing

Hot work permits are not required during the construction of new facilities or renovations of unoccupied existing facilities.

The contractor is responsible for the following:

- Understanding and complying with the BAA hot work permit program.
- Having trained employees and approved fire prevention equipment on site prior to performing work.
- Obtaining a hot work permit from the BAA Facilities Manager prior to the commencement of any hot work activity. To obtain a hot work permit contact the BAA Facilities Manager at (205) 599-0545 at least 24 hours before beginning any hot work activities.
- Acquiring a hot work permit prior to performing hot work within: Occupied existing facilities, 35 feet of a building, combustible materials or potential hazard such as a fuel storage tank, and confined spaces regardless of location.
- Coordinating with the BAA Project Manager and the BAA Operations Department the temporary shutdown of localized fire systems to prevent possible fire alarm activation and disruption of normal business operations.
- Posting the hot work permit at the job site in an accessible and conspicuous location.
- Submitting the hot work permit to the BAA Project Manager or Facilities Manager at the completion of the activity.
- Conducting their hot work activities in a sound fire safe manner and following the precautions outlined on the hot work permit.
- Assuring that a firewatcher remains on the job for 60 minutes after the completion of the hot work activity.

SECTION 15 SCAFFOLDING / LADDERS

Before undertaking any projects of repair, renovation or construction, that may require the use of scaffolding or ladders, contractors shall:

- Understand and comply with the BAA Contractor Safety Program.
- Ensure all employees have received training in compliance with federal and local regulations.
- Contact the BAA Project Manager with questions regarding scaffolding or ladder safety and required precautions.

The contractor shall ensure that scaffolding be:

- Erected and dismantled by competent workers, under the supervision of knowledgeable and experienced supervisors.

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- Erected on sound and rigid footing, capable of carrying the maximum intended load without settling or displacement.
- Securely fastened with all braces, pins, screw jacks, base plates and other fittings installed as required by the manufacturer.
- Limited to authorized personnel only, especially after working hours.
- Equipped with standard guardrails and toe boards on all open sides and ends of platforms.
- Provided with a screen between the toe board and the guardrail, where persons are required to work or pass under the scaffold.
- Replaced or repaired immediately if scaffolding and accessories have any defective parts.
- Provided with an access ladder or equivalent safe access. The

contractor shall ensure that the planking be:

- Scaffold grade or equivalent.
- Overlapped a minimum of 12 inches or secured from movement.
- Extended over their end supports not less than 6 inches or more than 12 inches. The

contractor shall ensure

- Barricades are erected whenever scaffolding or ladders are in use to prevent public access and for public protection.

SECTION 16 PERSONAL PROTECTIVE EQUIPMENT

Contractors shall provide their employees with personal protective equipment including:

- Protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be used wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.
- Provide training to each employee who is required to use PPE.

SECTION 17 HAZARD COMMUNICATION

The Contractor shall:

- Maintain and have accessible copies of Material Safety Data Sheets (MSDSs) for hazardous chemicals brought onto BAA property.
- Before use, forward MSDSs of hazardous materials to the BAA Project Manager for review.
- Maintain an effective hazard communication program.
- Use and store all hazardous or flammable chemicals, liquids, or gases brought onto the project site in approved containers conforming to applicable federal and local codes.
- Secure permits, if applicable, for the temporary storage of hazardous materials on the project site.
- Ensure that spills of hazardous materials are contained and cleaned-up immediately and that all necessary means and materials are maintained at the work site to accomplish this task.
- Notify the BAA Operations Department at (205) 599-0519 and the Project Manager immediately of a hazardous material spill.
- In the event the contractor encounters a hazardous material on the project site (i.e., asbestos, lead, PCBs), which has not been rendered harmless, the contractor shall report the condition to the Project Manager.

SECTION 18 TRENCHING & EXCAVATIONS

Excavations include, but are not limited to, operations such as drilling, digging and trenching.

Contractors shall apply the following safety controls:

- Before any excavation work begins, underground utilities shall be identified and the location marked of underground pipes, electrical conductors, gas lines or other structures.
- Evaluation is required of the trenching site by a "competent person" who knows and is trained to identify soil types, proper protective systems and hazardous conditions.
- Contact Alabama One Call at 252-4444 or (1-800-292-8525) for procedures and notification requirements.
- Conduct a daily inspection of the excavation and the adjacent areas prior to work and as needed during the workday. If there are any unsafe conditions, work shall stop in the excavation and personnel removed until the problems are corrected.
- Monitor and recognize hazardous atmospheres and conditions such as vibration, external loads, weather conditions, ground water conditions and confined spaces.
- Check all protective material or equipment for any damage.
- When excavations are deeper than 4 four feet, ladders or steps shall be located so that a worker does not need to travel more than 25 feet in the excavation before being able to exit. See (OSHA) confined space standard 29 CFR1910.148 for testing before employees enter excavations greater than 4 feet in depth.
- Each employee in an excavation shall be protected from cave-ins by an adequate protective system designed in accordance with OSHA Standard 1926, Subpart P.
- Examination of the ground by a competent person for excavations less than five (5) feet in depth must present no indication of a potential cave-in hazard. If a cave-in hazard exists, protective systems are required.
- When excavations are deeper than five (5) feet, the sides shall be provided with a protective system (shored, braced or sloped sufficiently) to protect against hazardous ground movement.
- When heavy equipment will be operated nearby, the shoring or bracing shall be able to withstand this extra load regardless of the depth of the excavation. For any excavation that a person will enter, all dirt, debris and excavation material shall be effectively stored or retained at least two (2) feet from the edge of the excavation.
- Adequate protection from hazards associated with water accumulation should be in place before working in excavations.
- Signs and Barricades shall be displayed at all excavation/trenching sites.
- All excavations into which a person could fall or trip shall be guarded. While work is being performed in or near the opening, the guards surrounding the area shall be maintained.
- Barricades at least 3 to 5 feet high shall be spaced no further than ten (10) feet apart and yellow and black "Caution, Do Not Enter" construction tape shall be stretched securely between the barricades.
- Excavations should be covered and not left open overnight, whenever possible.

SECTION 19 RED TAG PERMIT FOR FIRE SUPPRESSION SYSTEMS

Projects of repair, renovation or construction often require the disabling or alteration of automatic sprinkler and other fire safety systems. The Red Tag Permit Program is a system approved by the BAA and designed as a method of managing life safety (i.e. sprinkler system) impairments in BAA owned buildings in the event the systems must be temporarily taken out of service for repairs or replacement.

Before undertaking any projects of repair, renovation or construction, that may require the disabling or alteration of a sprinkler system in a BAA owned building, contractors shall:

- Plan to utilize temporary protection (i.e. fire extinguishers or charged lines).

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- Schedule any work that involves the disabling or alteration of sprinkler systems to be done during non-peak times.
- Restrict all Hot Work in the affected area.
- To obtain a Red Tag Permit contact the BAA Facilities Manager at 205-599-0545.
- Fill out the approved Red Tag Permit, following all instructions, and forward a copy to the BAA Project Manager, Facilities Manager and Operations Center.
- Place a FIRE PROTECTION OUT OF SERVICE tag on the isolated system.
- Promptly restore fire protection equipment to automatic service following completion of work.
- Conduct any tests to ensure the system has been fully recharged.
- Lock the system back open.
- Reset any notification systems (i.e. alarm systems).
- Complete the Red Tag and immediately notify the Project Manager and the Operations Center of the project completion.

SECTION 20 HAND AND POWER TOOL SAFETY

Each contractor shall be responsible for the safe working condition of tools and equipment used by its employees, which may include but are not limited to hand and portable power tools and other hand-held equipment.

Prior to performing activities related to repair, renovation, or construction projects, contractors shall eliminate or minimize any potential unsafe tools or equipment by implementing the following procedures:

- Each employer shall be responsible for the safe condition of tools and equipment used by its employees.
- Tools shall be inspected at regular intervals and shall be repaired in accordance with the manufacturers' specification.
- Power tools shall be maintained in accordance with the manufacturers' specifications.
- Appropriate personal protective equipment should be worn due to hazards that may be encountered while using portable power tools and hand tools.
- Tools should only be used for their intended purposes.
- All employees should receive instruction on regulations and the safe use of each power tool.
- Owner's manuals including manufacturers' specifications and suggested work practices should be kept on-file and made available upon request to all employees required to use the equipment.

SECTION 21 HAZARDOUS WASTE

To inform contractors of their responsibilities when handling, storing, transporting, and disposing of hazardous wastes generated at the Birmingham – Shuttlesworth International Airport it is the responsibility of the contractor to perform these activities in accordance with the Birmingham Airport Authority's Hazardous Waste Management Program (HWMP).

With the enactment in 1976 of the Resource Conservation and Recovery Act (RCRA), the transportation, handling, storage and disposal of hazardous wastes became regulated under federal, state and local laws. The Environmental Protection Agency (EPA) and the local jurisdictions have developed regulations for compliance with RCRA. Responsibility for compliance with hazardous waste regulations begins with the person generating the waste material and follows through to disposal.

RCRA defines a hazardous waste as a solid waste that because of its quantity, concentration, physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in serious, irreversible, or incapacitating reversible illnesses or pose a substantial, present or potential hazard to human health, safety, or welfare to the environment when improperly treated, stored, transported, used, disposed of or otherwise managed. Examples of hazardous wastes associated with the construction industry include, but are not limited to: adhesives,

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cements, lubricants, spill residues, used oil, cleaning supplies, solvents, paints, paint thinners, and empty cylinders.

Prior to performing activities related to repair, renovation, or construction projects potentially impacting or generating hazardous waste, contractors shall:

- Identify any potential hazardous wastes associated with the planned work activity.
- Implement their own Hazardous Waste Program.
- Implement their own employee-training program for the specific materials identified in compliance with local and federal regulations.
- Contact the BAA Project Manager regarding the transportation, handling, storage, and disposal of all solid and hazardous wastes potentially generated as part of the proposed work activities.
- Ensure no wastes are abandoned in place.
- Notify the BAA Project Manager prior to the transportation, handling, storage and disposal of all solid and hazardous wastes potentially generated as part of the proposed work activities.
- Comply with all local and federal regulations and the BAA HWMP.
- Forward copies of all transportation, handling, storage, and disposal records including but not limited to Hazardous Waste Manifests, DOT Permits, and Disposal or Recycling certificates to the BAA Project Manager.

SECTION 22 ELECTRICAL SAFETY

Construction activities frequently impact electrical systems as part of the planned work activity. Such activities include, but are not limited to:

Installation of electrical systems, components, machinery, and equipment
Alterations of electrical systems, components, machinery, and equipment
Maintenance of existing systems and equipment
Demolition of existing systems
Temporary planned outages
Tests and diagnostics

Prior to performing activities related to repair, renovation, or construction projects potentially impacting electrical system components and energized or non-energized machinery, equipment, parts, or systems, contractors shall:

- Identify any potential sources of electrical energy likely to cause death, injury, or serious physical harm.
- Notify the BAA Project Manager and the Facilities Manager of impact activities prior to the start of work.
- Coordinate planned outages with the BAA Project Manager.
- Ensure all employees performing impact activities have received sufficient training in compliance with federal and local regulations.
- Ensure all employees are provided adequate personal protective equipment as required by regulations.
- Ensure all work is performed in accordance with the guidelines of federal and local regulations and the BAA Lock-Out / Tag-Out Program.
- Ensure all affected employees, contractors, and tenants are notified through the BAA Project Manager prior to impacting building electrical systems.
- Follow Lock-Out/Tag-Out procedures for the Control of Hazardous Energy as specified in the OSHA 29 CFR 1910.147 Standard, and in the BAA Contractor Safety Manual (Section 5).

SECTION 23 POWERED INDUSTRIAL LIFT TRUCKS

Powered Industrial Lift Trucks include but are not limited to: fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines.

Prior to allowing employees access to job sites where industrial lift trucks are used, contractors shall ensure:

- Vehicles are inspected daily.
- Employees obey all safe operating procedures.
- Any power-operated industrial truck not in safe operating condition shall be removed from service.
- All repairs shall be made by authorized personnel.
- No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- Unauthorized personnel shall not be permitted to ride on powered industrial trucks.
- Operators will sound the horn and use extreme caution when meeting pedestrians, making turns, and traveling through doors.
- When loading trailers, dock plates will be used. Operators will assure dock plates are in good condition and will store on edge when not in use.
- Operators are instructed to report all accidents, regardless of fault and severity.
- All employees are trained in the operation and handling in accordance with federal and local regulations.

SECTION 24 EROSION AND SEDIMENT CONTROL

Each contractor shall be responsible for minimizing erosion and sediment transport on all excavation type projects to ensure compliance with the City of Birmingham's rules as well as the permit requirements administered by the Alabama Department of Environmental Management (ADEM).

Prior to any excavation project on any BAA owned properties with a planned disturbance of greater than 1 acre or sites that are less than 1 acre, but have the potential to have an adverse impact on downstream water quality contractors shall ensure:

- An Erosion and Control Best Management Practices (BMP) plan is submitted to the BAA Project Manager.
- All necessary local state and federal permits are obtained and maintained
- Conduct an initial on-site walkthrough inspection of site BMPs with the BAA Project Manager to ensure that all BMPs are installed in accordance with the approved Erosion and Sediment Control BMP plan.
- Conduct site inspections after each significant rainfall event or a minimum of once per week.
- Document failures / deficiencies in BMPs on site and communicate those deficiencies to the BAA Project Manager.

SECTION 25 ACCOUNTABILITY

Contractors will be responsible for complying with the above guidelines and for communicating the information to their employees and subcontractors. This includes the implementation of policies and procedures. All work shall be performed in accordance with all applicable laws and regulations.

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**SECTION 00 22 00
SPECIAL FAA REQUIREMENTS**

1. ~~AIRPORT LAYOUT PLAN CHANGE REQUEST~~

~~Prior to the start of construction, the Contractor shall be required to obtain the FAA permit for the construction equipment and machinery planned to be used at the Airport for the Project. Within ten (10) Days after the receipt of the written Notice of Intent to Award from the Owner, the Contractor shall coordinate with the Engineer and Owner to complete and submit the permit application entitled, "Airport Layout Plan Change Request". The permit review and approval process requires a minimum of forty five (45) Days. No construction equipment or machinery shall be permitted on the Airport property without prior approval from the FAA and the Owner. This construction equipment and machinery, with the approval, shall be marked and lighted in accordance with the FAA requirements or as shown and specified in the Contract Documents.~~

2. RESTRICTIONS REGARDING AIR OPERATIONS AREA

The Contractor shall control its operations and the operations of its Subcontractors and Suppliers so as to provide for the free and unobstructed movement of aircraft in the Air Operations Area (AOA) of the Airport. When the Work requires the Contractor to conduct its operations within the AOA, the Work shall be coordinated with the Owner's Operations Department (through the Engineer and OAR) at least seventy-two (72) hours prior to commencement. The Contractor shall not close an AOA until authorized by the OAR and until the necessary temporary markings and Lighting are in place as provided in Subsection 4 of this Section 002200, AOA CLOSURES.

3. CONTRACTOR OPERATIONS ON THE AOA

- 3.1** Aircraft traffic will continue to use existing Runways, aprons, and Taxiways of the Airport during the time that Work under the Contract is being performed. The Contractor shall at all times conduct its Work so as to create no hindrance, hazard or obstacle to aircraft using the Airport and must, at all times, conduct the Work in conformance with requirements of the Owner and the FAA Chief Control Tower Operator or authorized representatives.
- 3.2** The Contractor shall identify each motorized vehicle or piece of construction equipment in conformance to FAA Advisory Circular 150/5370-2G.
- 3.3** All Runways, Taxiways, and aprons which have been used by the Contractor's vehicles or equipment shall be returned to the condition existing prior to any closing or crossing and prior to the reopening of these areas to aircraft traffic. All existing wooded or grassed areas beyond the limit of Work damaged by the Contractor's operations shall be restored to its original condition by the Contractor.
- 3.4** If the Contractor is given approval to perform Work at night, the Contractor shall provide lights at the Work site and along the access route. Type, direction, number and location of lights shall be subject to the approval of the Owner and FAA Chief Control Tower Operator.
- 3.5** Open flame type lighting is prohibited on the AOA.

4. AOA CLOSURES

- 4.1** If absolutely essential, in order to permit construction, Runways or Taxiways may be closed to aircraft operations during periods when weather or other conditions do not require its use by aircraft, upon advance written application by the Contractor to the Owner and Engineer on a form to be provided by the Owner. The Contractor will schedule and organize its Work so that a minimum of closings or crossing of Runways and Taxiways will be required during the performance of the Work.
- 4.2** When the Work requires closing an AOA 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 the current edition FAA Advisory Circular 150/5340-1, Marking of Paved Areas on Airports.

5. NAVAIDS AND OTHER SIGNALS

- 5.1** There are installed on the Airport FAA NAVAIDS or Owner NAVAIDS and other electronic and visual signals (hereinafter collectively NAVAIDS) which may include but not be limited to, ASR, UHF, NDB and VHF Receivers and Transmitters, National Weather Service Facilities, Lighting, electric cables and controls relating to such NAVAIDS and facilities and other electric power cables serving other facilities. Such NAVAIDS, National Weather Service 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 only at approved periods of time, which approval is subject to withdrawal at any time because of changes in the weather, emergency conditions on the existing airfield areas, anticipation of emergency condition and for any other reason as determined by the Engineer and OAR acting under the orders and instructions of the Owner or the designated FAA representative. Any instructions to the Contractor to clear any given area, at any time by the OAR, Engineer / Engineer, the Owner's Director of Operations or the Air Traffic Control Tower (by radio or other means) shall be immediately executed. Construction Work will be commenced in the cleared area only when additional instructions to this effect are issued.

To the extent that they are known, the approximate locations of NAVAIDS, National Weather Service and other facilities have been indicated on the Contract Drawings. The Owner does not warrant or guaranty the accuracy or completeness of the location information relating to NAVAIDS, National Weather Service and other facilities appearing on the Contract Drawings. Any inaccuracy or omission shall not relieve the Contractor of its responsibility to protect such existing facilities from damage or unscheduled interruption of service.

- 5.2** Power and control cables leading to and from any NAVAIDS, National Weather Service and other facilities will be marked in the field by the Contractor, before any Work in its general vicinity is started. Thereafter, through the entire time of this construction, they shall be protected from any possible damage.
- 5.3** These special provisions intend to make perfectly clear the need for protection of FAA NAVAID's, National Weather Service and other facilities and cables by this Contractor at all times.
- 5.4** The Contractor shall immediately repair at its expense, with identical material by skilled Workers, any underground cables serving FAA NAVAIDS, National Weather Service and other Airport facilities, which are damaged by its Workers, equipment or Work. Prior approval of the FAA must be obtained for the materials, Workers, time of Day or night, method of repairs, or for any temporary or permanent repairs the Contractor proposes to make to any FAA NAVAIDS, National Weather Service facilities or other cables and controls serving such NAVAIDS and facilities which are damaged by the Contractor. Prior approval by the Owner must be obtained for the materials, Workers, time of Day or night, method of repairs for any temporary or permanent repairs the Contractor proposes to make to any of the Airport facilities and cables damaged by the Contractor.

6. FAA REQUIRED PROVISIONS

6.1 Agreements with the United States and State of Alabama. This Contract shall be subject to all restrictions of record affecting the Airport and the use thereof, all Federal and state laws and regulations affecting the same, and shall be subject and subordinate to the provisions of any existing agreement between the Owner and the United States of America or the State of Alabama, their boards, members, agencies or commissions and to future agreements between the foregoing relative to the operation or maintenance of the Airport, the execution of which may be required as a condition precedent to the expenditure of Federal or state funds for the development of the Airport, or as a condition precedent to the use of the Airport, or any part thereof, by the Contractor, the Owner or otherwise. All provisions hereof shall be subordinate to the right of the United States of America to terminate the right of the Contractor, the Owner, or others, to occupy or to use the Airport, or any part thereof, during the time of war or national emergency.

6.2 Covenants Against Discrimination. The Contractor, for itself, its successors in interest and assigns, as part of the consideration hereof, does hereby covenant and agree as a covenant running with the land that (1) no person on the grounds of race, color, religion, sex, age, physical handicap or national origin shall be excluded from participation in, denied the benefit of, or be otherwise subjected to discrimination in the use of the Airport under the provisions of this Agreement; (2) that in the construction of any improvements on, over or under the Airport and the furnishing of services thereon, no person shall be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination on the above-stated grounds; (3) that the Contractor shall use the Airport property in compliance with all other requirements imposed by or pursuant to state law or Title 49, Code of Federal Regulations, Department of Transportation - effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended. Should the Contractor authorize another person, with the Owner's prior written consent, to provide services or benefits upon the Airport property, the Contractor shall obtain from such person a written agreement pursuant to which such person shall, with respect to the services or benefits which it is authorized to provide, undertake for itself the obligations contained in this Subsection. The Contractor shall furnish the original of such Agreement to the Owner.

In the event of breach of any of the above non-discrimination covenants, the Owner shall have the right to terminate this Agreement. The right granted to the Owner by the foregoing sentence shall not be effective until the procedures of Title 49, Code of Federal Regulations, Part 21, if applicable, are followed and completed, including exercise or expiration of appeal rights.

The Owner may from time to time be required by the United States Government, its agencies, or the State of Alabama to adopt additional or amended provisions including non-discrimination provisions, concerning the use and operation of the Airport, and the Contractor agrees that it will adopt any such requirement as a part of this Agreement.

6.3 Fair Prices. If the Contractor shall furnish any services to the public at the Airport, it shall furnish said services on a fair, equal and not unjustly discriminatory basis to all users thereof and shall charge fair, reasonable and not unjustly discriminatory prices for each unit of service, provided that the Contractor shall be allowed to make reasonable and non-discriminatory discounts or rebates or other similar types of price reductions to volume purchasers, if any.

6.4 Miscellaneous Provisions.

6.4.1 The Contractor will not erect or permit the erection on the Airport property of any permanent or temporary structure or facility which would interfere materially with the use, operation or future development of the Airport, or permit the generation of electronic emissions that would interfere with communications and navigation by aircraft using the Airport.

6.4.2 This Contract confers no right upon the Contractor to use any landing area or air navigation facility at the Airport, and hence, nothing contained in this Contract shall be construed to grant, or to authorize the granting of, an exclusive right for the use of any such landing area or air navigation facility in violation of Section 00308 of the Federal Aviation Act of 1958.

6.4.3 The Contractor shall comply with all applicable FAA regulations concerning Airport security.

6.4.4 The Contractor expressly agrees for itself, its successors and assigns, to provide the Owner with background checks to the extent allowable by law, for any employee of the Contractor or any of its Subcontractors, who have unescorted access to any area of the Airport controlled for security reasons. Said background checks shall include, but not be limited to, references and prior employment histories, to the extent necessary to verify representations made by the Contractor and its employees concerning all such employees, relating to employment in the preceding ten (10) years.

6.4.5 The Contractor shall not, in its operations hereunder, generate any odors, fumes, smoke, noise, glare, vibration, electronic emissions, soot, dust or atmospheric pollution, sewage, industrial or other wastes, in violation of any applicable law, regulation or procedure of any Federal, state, county or city authority having jurisdiction with respect to such matters.

6.4.6 The Owner reserves unto itself, its successors and assigns, for the use and benefit of the public, a right of flight for the passage of aircraft in the airspace above the surface of the Airport, together with the right to cause in said airspace such noise as may be inherent in the operation of aircraft, now known or hereafter used, for navigation or flight in the said airspace, and for use of said airspace for landing on, taking off from or operating on the Airport.

6.4.7 The Contractor expressly agrees for itself, its successors and assigns, to restrict the height of structures, objects of natural growth and other obstructions on the Airport to such a height so as to comply with Federal Aviation Regulations, Part 77.

6.4.8 The Contractor agrees for itself and its Subcontractors to require any lights on the Airport to be constructed, focused or arranged in a manner that will prevent the lights from casting beams in an upward direction so as to interfere with the vision of pilots in aircraft.

6.4.9 If the FAA determines that any right or Claim of right in or to the property herein creates an undue risk or interference with the operation of the Airport or the performance of or compliance with any covenants and conditions to which the use of the Airport is subject, said right or Claim shall be extinguished or modified in a manner acceptable to the FAA.

6.4.10 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.

7. INSPECTION BY OTHERS

Jefferson County Environmental Services shall be notified before work commences on their right- of-way. All excavation, blasting and sanitary sewer encasement will be subject to inspection by Jefferson County Environmental Services. Such inspections shall not be construed so as to make Jefferson County Environmental Services a party to this Contract and shall not interfere with the performance of the obligations of any party to this Contract.

8. USE OF SITE

8.1 Personal vehicles of employees and vehicles operated by vendors of goods or services will not be permitted beyond the Contractor's parking area.

8.2 No signs shall be placed on the site, nor shall any photographs be taken without the Owner's prior written consent. No visitors other than persons engaged in the Work shall be permitted on the construction site without the Owner's prior written consent.

9. BARRICADES, WARNING SIGNS AND HAZARD MARKINGS

For Work on the AOA, the following requirements are in addition to those prescribed in Section 00201, Safety Plan for the Air Operations Area.

9.1 The Contractor shall furnish, erect and maintain markings and associated lighting of open trenches, excavations, temporary stock piles and parked construction equipment that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the Airport in reasonable conformance to FAA Advisory Circular 150/5370-2G, Safety on Airports During Construction included in the Appendix.

9.2 The Contractor shall furnish and erect all barricades, warning signs, and marking for hazards prior to commencing Work which requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their dismantling is approved in writing by the Owner.

9.3 All cranes used on the site shall be marked in the following manner:

9.3.1 During Daylight hours, a flag shall be installed at the highest point of the equipment. The flag shall be aviation surface orange and be a minimum of five (5) feet square.

- 9.3.2** During non-Daylight hours, at least one steady burning light should be installed at the highest point of equipment on a horizontal plane in a manner to insure unobstructed visibility of aircraft at any normal angle of approach. The obstruction light shall be enclosed in aviation red obstruction light globe of at least 116 watts (when used in multiple circuit) with an intensity of not less than 32.5 foot-candles. If the crane boom is lowered to the ground at night, obstruction lights will not be required.

10. CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS

For Work on the AOA, the following requirements are in addition to those prescribed in Section 002010, Safety Plan for the Air Operations Area.

- 10.1** The Contractor shall cooperate with the Owner of any public or private utility service, FAA or NOAA, or a utility service of another governmental 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 its operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA or National Oceanic and Atmospheric Administration (NOAA) facilities, or utility services of other governmental agency are known by the Owner to exist within the limits of the Contract Work, the approximate locations have been indicated on the Contract Drawings.

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

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the owners of all utility services or other facilities of its 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 its 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 notice hereinabove provided shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility. Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use 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, the Contractor 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 its surety.

10.2 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:

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

b. The Contractor shall notify the FAA Technical Operations Point-of-Contact (Bridgit Range 205-769-3950) seven (7) calendar days prior to commencement of construction activities in order to permit sufficient time to locate and mark existing buried cables and to schedule any required facility outages.

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

d. 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.

e. 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 Technical Operations 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 Technical Operations' 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 Technical Operations restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA Technical Operations, the Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.

11. **FAA BUY AMERICAN PREFERENCE**

The Contractor certifies that its bid/offer is in compliance with 49 USC § 50101, BABA and other related Made in America Laws,¹ U.S. statutes, guidance, and FAA policies, which provide that Federal funds may not be obligated unless all iron, steel and manufactured goods used in AIP funded projects are produced in the United States, unless the Federal Aviation Administration has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

The bidder or offeror must complete and submit the certification of compliance with FAA's Buy American Preference, BABA and Made in America laws included herein with their bid or offer. The Airport Sponsor/Owner will reject as nonresponsive any bid or offer that does not include a completed certification of compliance with FAA's Buy American Preference and BABA.

The bidder or offeror certifies that all constructions materials, defined to mean an article, material, or supply other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives that are or consist primarily of: non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); lumber; or drywall used in the project are manufactured in the U.S.

12. **CERTIFICATION OF COMPLIANCE WITH FAA BUY AMERICAN PREFERENCE**

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with its proposal. The bidder or offeror must indicate how it intends to comply with 49 USC § 50101, BABA and other related Made in America Laws, U.S. statutes, guidance, and FAA policies, by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e., not both) by inserting a checkmark (✓) or the letter "X".

☐ Bidder or offeror hereby certifies that it will comply with 49 USC § 50101, BABA and other related U.S. statutes, guidance, and policies of the FAA by:

- a) Only installing iron, steel and manufactured products produced in the United States;
- b) Only installing construction materials defined as: an article, material, or supply – other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives that are or consist primarily of non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); lumber or drywall that have been manufactured in the United

¹ Per Executive Order 14005 "Made in America Laws" means all statutes, regulations, rules, and Executive Orders relating to Federal financial assistance awards or federal procurement, including those that refer to "Buy America" or "Buy American," that require, or provide a preference for, the purchase or acquisition of goods, products, or materials produced in the United States, including iron, steel, and manufactured products offered in the United States.

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- c) Installing manufactured products for which the Federal Aviation Administration (FAA) has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
- d) 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:

- a) 2F To provide to the Airport Sponsor or the FAA evidence that documents the source and origin of the iron, steel, and/or manufactured product.
- b) To faithfully comply with providing U.S. domestic products.
- c) To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.
- d) Certify that all construction materials used in the project are manufactured in the U.S.

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

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

Required Documentation

Type 2 Waiver (Nonavailability) - The iron, steel, manufactured goods or construction materials or manufactured goods are not available in sufficient quantity or quality in the United States. The required documentation for the Nonavailability waiver is:

- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire

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- b) Record of thorough market research, consideration where appropriate of qualifying alternate items, products, or materials including;
- c) A description of the market research activities and methods used to identify domestically manufactured items capable of satisfying the requirement, including the timing of the research and conclusions reached on the availability of sources.

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

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

Type 4 Waiver (Unreasonable Costs) - Applying this provision for iron, steel, manufactured goods or construction materials would increase the cost of the overall project by more than 25 percent. The required documentation for this waiver is:

- a) A completed Content Percentage Worksheet and Final Assembly Questionnaire from
- b) At minimum two comparable equal bids and/or offers;
- c) Receipt or record that demonstrates that supplier scouting called for in Executive Order 14005, indicates that no domestic source exists for the project and/or component;
- d) Completed waiver applications for each comparable bid and/or offer.

Date

Signature

Company Name

Title

END OF SECTION 00220

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EQUAL EMPLOYMENT OPPORTUNITY AND WAGE AND LABOR PROVISIONS

25.01 EQUAL OPPORTUNITY CLAUSE

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

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, 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 consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or workers' representative of the Contractor's commitments under this section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any such 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 in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The Contractor will include the provisions of paragraphs (1) through (8) 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 may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance: *Provided*, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

25.02 STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS

1. As used in these specifications:
 - a) "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b) "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
 - c) "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
 - d) "Minority" includes:
 1. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 2. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
 3. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and
 4. maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is Set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR part 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must 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 areas 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 nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

- d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's work force.
- 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 nonsegregated 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 group 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, the Contractor may be in violation of the Executive Order if a 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, sexual orientation, gender identity, or national origin.
11. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR part 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records.
- Records shall at least include for each employee, the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status

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(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).

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DOCUMENT 00 26 00

PROCUREMENT SUBSTITUTION PROCEDURES

1.1 DEFINITIONS

- A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.
- B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 01 25 00 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

- A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.
- B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise, requests will be returned without action:
 - 1. Extensive revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
 - 3. The request is fully documented and properly submitted.

1.4 SUBMITTALS

- A. Procurement Substitution Request: Submit to Architect. Procurement Substitution Request must be made in writing by prime contract Bidder only in compliance with the following requirements:
 - 1. Requests for substitution of materials and equipment will be considered if received no later than 10 days prior to date of bid opening.
 - 2. Submittal Format: Submit one electronic copy of each written Procurement Substitution Request, using form bound in Project Manual.
 - 3. Submittal Format: Submit Procurement Substitution Request, using format provided on Project Web site.
 - a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
 - b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
 - 1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
 - 2) Copies of current, independent third-party test data of salient product or system characteristics.
 - 3) Samples where applicable or when requested by Architect.

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- 4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - 5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - 6) Research reports, where applicable, evidencing compliance with building code in effect for Project, from ICC-ES.
 - 7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.
- c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
 - d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.
- B. Architect's Action:
1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.
- C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

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DOCUMENT 00 26 01

SUBSTITUTION REQUEST FORM DURING BIDDING

(Bidders shall use this form for submitting substitution requests during Bidding. Other forms of substitution requests will not be considered. This form must be received by Engineer not later than 10 calendar days prior to Bid Opening Date)

Project: Birmingham-Shuttlesworth International Airport Substitution Request Number: _____
Taxiway Alpha Emergency Patching
Birmingham, Alabama Re: _____

To: SARCOR LLC From: _____
215 19th Street N
Suite 101
Birmingham, AL 35203

Specification Title: _____ Section: _____
Description : _____ Page: _____ Article/Paragraph: _____

Proposed Substitution : _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: ☐ New Product ☐ 1 – 4 years old ☐ 5 – 10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

☐ Point by Point comparative data attached – REQUIRED BY ENGINEER

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Engineer: _____

Address: _____ Owner: _____

Date Installed: _____

Proposed substitution affects other parts of Work: ___ No ___ Yes: Explain _____

Savings to Owner for accepting substitution: _____ (\$ _____)

Proposed substitution changes Contract Time: ___ No ___ Yes [Add] [Deduct] _____ days.

Supporting Data Attached:

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☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

The Undersigned Certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted By: _____ Signed By: _____

Firm: _____

Address: _____

Telephone: _____ Fax: _____

E-mail: _____ Website: _____

Attachments: _____

A/E's REVIEW AND ACTION (to be filled in by Engineer)

- ☐ Substitution Approved
- ☐ Substitution Approved as Noted
- ☐ Substitution Rejected
- ☐ Substitution Request Received Too Late

Signed By: _____ Date: _____

Additional Comments:

☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ A/E ☐ _____

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SECTION 00 27 00 DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

The following bid conditions apply to this Federally Assisted contract. Submission of a bid/proposal by a prospective contractor shall constitute full acceptance of these bid conditions.

27.01 DEFINITION

Disadvantaged Business Enterprise (DBE) as used in this contract shall have the same meaning as defined in Section 26.5 subpart "A" to 49 CFR Part 26.

27.02 POLICY

It is the policy of the Authority that DBEs as defined in 49 CFR Part 26 will have maximum opportunity to participate in the performance of all Authority projects and the Bidder will take all necessary and reasonable steps to ensure that DBEs have the maximum opportunity to compete for and perform subcontracts. Bidders will demonstrate that they will subcontract with certified DBEs, or clearly demonstrate in a manner acceptable to the Authority its good faith efforts to obtain DBE subcontractors. The successful bidder's DBE commitment as stated on their Letter(s) of Intent will be incorporated into the contract and will be enforceable under the terms of the contract.

Bidders are encouraged to refer to the Authority's DBE Policy and Program which is posted on the Authority's website: www.flybirmingham.com. Bidders should refer to the directory of DBE companies certified by the Birmingham Airport Authority's DBE Program. Additional assistance may be obtained by calling the Authority's DBE Liaison Compliance Officer at 205-599-0703.

27.03 OBLIGATION

Each contract the Authority executes with the Bidder and each subcontract the Bidder executes with a subcontractor, must include the following clause:

"The Bidder or subcontractor will not discriminate on the basis of race, creed, color, national origin, or sex in the performance of this contract or subsequent subcontracts. Failure of the Bidder or subcontractor 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 Authority deems appropriate."

27.04 CONTRACTOR ASSURANCE

Reference 49 CFR Part 26.13(b)

The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of 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, which may include, but is not limited to:

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

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27.05 CONTRACT AWARD

Bidders are hereby advised that meeting the DBE subcontract goal or making an acceptable good faith effort to meet said goal are conditions of being awarded this FAA assigned contract. (Good Faith Effort - Sub-Part "C"; 26.53).

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

27.06 DBE PARTICIPATION GOAL

DBE Goals are established for each specific prime contract with subcontracting opportunities. The Bidder will subcontract with DBEs certified by the Authority at least **23%** of the dollar value of the Prime Contract and 3% for SBEs. Only DBEs and SBEs certified by the Authority will count toward the Contract Goal. In accordance with the Authority's policy, "A recipient may count expenditures of materials and supplies obtained from a DBE or SBE Manufacturer at 100% of the cost of the materials or supplies toward DBE and SBE Goal." In accordance with the Authority's policy, "A recipient or Contractor may count toward its DBE Goal of 23% or SBE goal of 3% of its expenditures for materials and supplies required under a Contract and obtained from a DBE regular dealer."

In the event that the Bidder for this solicitation qualifies as an eligible DBE, the Contract Goal will be deemed to have been met, if the Bidder performs at least the prescribed DBE Contract Goal percentage of the Work with its own forces. The Bidder will be required to submit information concerning those DBEs that will participate in this Contract at the time its Bid is submitted to the Authority. The information will include the names and addresses of each DBE, description of the Work to be performed by each named DBE firm, the dollar amount of said Work and percent of the Contract, written documentation of the Bidder's commitment to use a DBE subcontractor whose participation it submits to meet a contract Goal, and written confirmation from the DBE subcontractor that it will be participating in the Contract provided in the Prime Bidder's Bid. Failure of the Bidder to submit the required DBE information in its Bid may render the Bid non-responsive. If the Bidder fails to achieve the Goal stated herein, the Bidder will be required to provide documentation demonstrating that the Bidder made "Good Faith Efforts" in attempting to do so.

27.07 TERMINATION OF DBE SUBCONTRACTS

The prime contractor must not terminate a DBE subcontractor listed in response to [include Solicitation paragraph number where paragraph 12.3.1, Solicitation Language appears] (or an approved substitute DBE firm) without prior written consent of [Name of Recipient]. This includes, but is not limited to, instances in which the prime contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

The prime contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains written consent [Name of Recipient]. Unless [Name of Recipient] consent is provided, the prime contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

[Name of Recipient] may provide such written consent only if [Name of Recipient] agrees, for reasons stated in the concurrence document, that the prime contractor has good cause to terminate the DBE firm. For purposes of this paragraph, good cause includes the circumstances listed in 49 CFR §26.53.

Before transmitting to [Name of Recipient] its request to terminate and/or substitute a DBE subcontractor, the prime contractor must give notice in writing to the DBE subcontractor, with a copy to [Name of Recipient], of its intent to request to terminate and/or substitute, and the reason for the request.

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The prime contractor must give the DBE five days to respond to the prime contractor's notice and advise [Name of Recipient] and the contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why [Name of Recipient] should not approve the prime contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), [Name of Recipient] may provide a response period shorter than five days.

In addition to post-award terminations, the provisions of this section apply to pre-award deletions of or substitutions for DBE firms put forward by offerors in negotiated procurements.

27.08 AVAILABLE DBES

To ensure the eligibility of DBEs proposed to participate on the contract, all DBEs must be certified by the Authority regardless of their certification with another agency. The Authority's DBE Directory may be found on the Authority's website at www.flybirmingham.com, under "About BHM" section or by contacting the Authority's DBE Liaison Compliance Officer at 205-599-0522. ***DBEs must be certified with the Authority at the time bids are received.***

27.09 CONTRACTOR'S REQUIRED SUBMISSION

The owner requires the submission of the following information with the bid. The required forms are included in Division I:

Section 000540 – Disadvantaged Business Enterprise Data Section
Section 000550 – Non-Disadvantaged Business Enterprise Data
Section 000560 – Disadvantaged Business Unavailability Certification

Bidder Efforts to Meet DBE Subcontract Goals:

1. In all contracts, the apparent successful Bidder will satisfy the Authority that it has made "Good Faith Efforts" to utilize DBEs in meeting the established DBE Goal. "Good Faith Efforts" are those efforts that could reasonably be expected to result in DBE Goal attainment by a Bidder who aggressively and actively seeks to obtain DBE participation. Efforts that are merely "Pro Forma" are not "Good Faith Efforts" to meet DBE Goals. Efforts to attain DBE participation are not "Good Faith Efforts" to meet the Goals even if they are sincerely motivated, if, given all reasonable circumstances, the efforts could not reasonably be expected to produce a level of DBE participation sufficient to meet such Goals. In determining whether or not the apparent successful Bidder has made such "Good Faith Efforts" to meet the Goal, some of the factors the Authority will consider are the following:
 - a. Whether the Bidder attended any Pre-Solicitation or Pre-Bid Meetings that were scheduled by the Authority to inform DBEs of contracting and subcontracting opportunities;
 - b. Whether the Bidder advertised in general circulation, trade association, and minority- focus media concerning the subcontracting opportunities at least ten calendar days prior to bid opening;
 - c. Whether the Bidder provided written notice by certified mail to a reasonable number of specific DBEs that their interest in the Contract was being solicited at least ten calendar days prior to bid opening;
 - d. Whether the Bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested;
 - e. Whether the Bidder selected portions of the Work to be performed by DBEs in order to increase the likelihood of meeting the DBE Goals "Good Faith Efforts" and, in the case of federally-funded

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- projects, the DBE Goals (including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation);
- f. Whether the Bidder provided interested DBEs with adequate information about the Drawings, Specifications or requirements of the Contract;
 - g. Whether the Bidder negotiated in good faith with interested DBEs, not rejecting DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities;
 - h. Whether the Bidder made efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance required by the Authority or Contractor;
 - i. Whether the Bidder effectively used the services of available minority community organizations; minority contractors' groups; local, state and federal minority business assistance offices; and other organizations that provide assistance in the recruitment and placement of DBEs;
 - j. Whether the Scope of Work submitted by the Bidder to any DBE contractor, DBE subcontractor, DBE sub-subcontractor, DBE supplier, DBE sub-supplier or DBE sub-sub-supplier, and so on, either directly or in-directly, was intended to achieve, in whole or in part, the specified DBE participation;
 - k. Whether the replies or quotes from DBEs in response to Scopes of Work submitted to them by contractors, either directly or indirectly, were fair and responsive;
 - l. Whether the Bidder fairly represented DBE quotations in the formulation of the Bidder's bid as shown on the Contractor's bid tabulation or other work documents supporting the Bidder's bid; and
 - m. Whether the Bidder contacted the Authority's DBE Liaison Compliance Officer for assistance in meeting the Authority's DBE Goals.
2. Bidders who do not meet DBE contract Goals may alternately satisfy the good faith efforts requirement by documenting their efforts to do so, and on a finding by the Authority that the Bidder did not meet the good faith effort, are entitled, at their option, to the administrative reconsideration process as outlined in the Authority's DBE policy.
 3. Any Bidder who meets the DBE Goals will be deemed to have made the necessary "Good Faith Efforts" without the need for further proof. Failure to meet the Goal may be grounds for refusing to award the Contract, if, upon investigation by the Authority, such investigation shows that the Bidder refused to make a "Good Faith Effort" to meet the Goal, or that the failure was due to discrimination. In that event, the Authority may refuse to award the Contract to that Bidder.
 4. The Authority will require Bidders to submit documents that show that they obtained enough participation from certified DBEs to meet the DBE Goals. Failure to provide such information may render the bid non-responsive. However, the Authority reserves the right to require such additional and supplemental information solely for the purpose of clarifying the DBE information submitted by the Bidder. The individual responsible for making initial good faith determinations for the Authority will be the DBE Liaison Compliance Officer.

Bidder's DBE Assurance: Each Bidder will submit written assurance of its ability to meet the prescribed Goal in its Bid.

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Bidders may be considered non-responsive and may be ineligible for award of Contract if their Bid does not contain this Assurance. The Bidder agrees to indemnify the Authority from the loss of any funds or other damages that may result from Bidder's failure to achieve the DBE Goal set forth herein or to establish a good faith effort to do so, including attorney's fees and costs associated with said failure by Bidder or good faith investigation by Authority. Failure of Bidder to achieve the DBE Goal as bid without showing a "Good Faith Effort" to do so, will be considered a material breach of the Contract. The determination of whether Bidder's efforts were made in "Good Faith" will be made by Authority.

NOTE: The items set forth above are merely suggested criteria and the Owner may specify that additional information be submitted regarding certain other actions the contractor took to meet the goals. The contractor may also submit to the owner other information in an effort to meet the goals.

27.10 DBE PAYMENT CERTIFICATION FORM

The Birmingham Airport Authority has a prompt payment clause and a DBE payment certification form. The certification form, see attachments "B" and "B-1," shall be submitted to the DBE Officer on a monthly basis to ensure that the DBEs and other small business are paid according to the prompt payment clause. The certification form shall be submitted monthly whether a payment was made to the DBEs or not until the project is completed.

ATTACHMENT "A"

CONTRACTOR'S ASSURANCE

The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of the 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 this contract or such other remedy, as the recipient deems appropriate.

DBE CERTIFICATE OF COMPLIANCE

_____ is a contractor who understands that the DBE participation information will be required prior to committing the Birmingham International Airport to award the contract to the apparent successful competitor. If a contract goal has not been established, then the above statement will not be included in the solicitation. However, if a goal has been decided then the goal will be listed in all solicitations.

REQUIREMENTS FOR AN EFFECTIVE DBE PROGRAM

1. DBE Program
2. DBE Directory
3. Project/Contract Goals
4. DBE Data Reporting Forms
5. DBE Firm Certifications
6. Good Faith Effort review and Determinations
7. Reporting
8. Compliance
9. Complaints & Appeals Procedure
10. Program Enhancements

Although DBE goals are often the focus of the program, airport sponsors are required to implement a full range of actions to ensure that their DBE programs are successful. **Airports must approve the substitution of any DBE subcontractor and must determine that the contractor made reasonable efforts to find another DBE.** Many airports may rely upon the DBE certification done by other approved entities where UCP is concerned.

ATTACHMENT "B"

BIRMINGHAM AIRPORT AUTHORITY				49CFR Part 26 Section 26.29				Rev: 6/25/09	
DBE LIAISON COMPLIANCE OFFICER									
PROJECT # _____				PAY APPLICATION # _____ CONTRACTIVE					
PARTY _____		DBE _____		PAYMENTS _____		MONTH/YEAR: _____		<u>DBE SCHEDULE OF VALUES</u>	
		SCHEDULED AMOUNT		THIS PERIOD		PREVIOUS PERIOD		BALANCE TO FINISH	
TOTAL:									
I, _____, certify that the above amounts are true and conform with our contract agreement. I certify that all DBE and small businesses participating on this contract will be paid ten days after I receive a check from BAA. I certify that all NON-DBE's will be paid within ten (10) days of receipt of check from Birmingham Airport Authority. Executed by: _____ this the _____ day of _____ Year: _____									

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ATTACHMENT "B"

PROMPT PAYMENT AND PROMPT RETURN OF RETAINAGE

The prime contractor agrees to pay each DBE and small subcontractors under this prime contract for satisfactory performance of its contract no later than ten (10) days from the receipt of each payment the prime contractor receives from Birmingham Airport Authority. The prime contractor agrees further to return retainage payments to each DBE and small subcontractor within (30) days after the subcontractor's work is satisfactorily inspected and approved. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Birmingham Airport Authority. This clause applies to both DBE and non-DBE subcontractors. This is in compliance with 49 CFR Part 26.29.

The return of retainage policy is based upon satisfactory completion of work done by the DBE participants and other small business. It requires that the prime contractor, the subcontractor(s), the BAA Project Manager, Consultant, and/or any other interested party associated with the project, to complete a formal inspection. Then create a punch list of any deficient items and satisfactory correction of any such items within 30-day period. Then retainage amounts will be deducted from the prime contractor's retainage on the next invoice, per the P&D Project Managers.

See BAA policy on alternative disputes resolution under Part 26.29. The BAA Project Manager and/or legal counsel will be the prime representative to settle any and all disputes concerning the DBE program, policies, procedures, and good faith investigation hearings.

**BIRMINGHAM AIRPORT AUTHORITY
COMPLIANCE-SAFETY OFFICER'S REPORT PRE-
BID AND CONTRACT NEGOTIATIONS**

DEFINITIONS

Responsive Bidder -

A person or firm who has submitted a bid which conforms in all material respects to the invitation to bid.

Responsible Bidder -

A person or firm who has the capability, in all respects, to perform fully the contract requirements and the moral and business integrity and reliability which will assure good faith performance, and who has been pre-qualified, if required.

REGULATION: 49 CFR PARTS 26.53

Revised: June 26, 2009

QUESTION:

DO THE DBE PROGRAM AND DBE CONTRACT GOALS APPLY TO CHANGE ORDERS IN CONTRACTS?

ANSWER:

- A recipient's DBE program applies to all its DOT-assisted contracting, including change orders to an existing contract which have more than a minimal impact on the contract amount.
- If there is a change order to a contract on which there is a DBE contract goal, then that contract goal applies to the change order as well as to the original contract. This is true regardless of whether the recipient or the contractor initiates the change order.
- For example, supposed that a recipient awards a \$1 million contract to Firm X. The contract goal is 15 percent. Firm X meets the contract goal by obtaining DBE participation from subcontractor or suppliers amounting to \$150,000.
- Part way through performance of the contract, the recipient determines that additional work is necessary, and issues a change order that will add \$500,000 to the total contract price. The 15 percent contract goal applies to this additional \$500,000.
- To meet the contract goal as applied to the change order, Firm X would have to make good faith efforts to obtain an additional \$75,000 in DBE participation. It could meet this obligation either by obtaining the additional \$75,000 in work by DBE subcontractors or suppliers or by documenting good faith efforts.
- The recipient would determine, on a case-by-case basis, what would constitute good faith efforts in the context of a particular change order. This could include modifying the contract goal amount applicable to the change order if circumstances warrant.
- There may be situations in which a change order has such a minimal effect on the overall contract amount or the expected DBE participation on a contract that it would not be sensible to alter DBE requirements affecting the contract. If a recipient believes that a change order has such a minimal effect, the recipient should contact the relevant DOT operating administration for guidance on whether it is necessary to alter DBE requirements affecting the contract.

**Birmingham Airport Authority
Disadvantaged Business Enterprise
DBE – Replacement Form**

Prime Contractor:

Contact Person:

Address:

City/State:

Telephone/Fax Number:

Contract Number:

Project Name:

DBE to be replaced:

Why?

Amount paid DBE to date:

Replacement DBE:

Amount to be paid?

Comments:

Signed: Program Manager:

Signed: Prime Contractor:

Approved by BAA DBE Officer: _____

Date:

Not Approved: _____

Date:

END OF SECTION 00270

**SECTION 00 28 00
INSURANCE AND BOND REQUIREMENTS; INDEMNIFICATION**

1. CONTRACTOR'S INSURANCE

- 1.1 It is highly recommended that each Bidder request that its current insurance broker/agent review the insurance requirements in this Contract before completing and submitting a Bid, so each Bidder will be aware of any additional cost that may be incurred to meet the Owner's insurance requirements for this Contract. No such additional costs shall be part of the Bid price, and the selected Bidder/Contractor shall be responsible for paying the same.**

The selected Bidder/Contractor will be required to provide to the Owner prior to commencement of any Work certificates evidencing the insurance coverages listed below, including separate endorsements naming the following entities as additional insureds on all such insurance policies (excluding Worker's Compensation insurance): Birmingham Airport Authority, City of Birmingham, Alabama, and their respective directors, council members, agents and employees, including, with limits, the OAR; and the Engineer and the other named consultants, their officers, agents and employees. The Bidder/Contractor's policy will be primary to any other valid and collectible insurance available to the airport. Contractor shall have its insurance broker/agent complete and submit with the required evidence of insurance the Notice to Contractor's Insurance Agent or Broker attached to this Section 280 as Attachment "A".

Bidder is advised that a waiver of subrogation in favor of Owner, its officers, officials, consultants, agents and employees must be provided for the Worker's Compensation insurance coverage required hereunder.

Bidder is also advised of the statutory immunity of negligence applicable to the owner and its directors which is contained in Article 2, Chapter 3 of Title 4 Section 4-30-50 of the Code of Alabama, 1975.

All policies of insurance shall have a non-cancellation and non-termination clause providing that sixty (60) Days prior written notice shall be given to Owner prior to any such cancellation or termination.

The selected Bidder/Contractor must provide proof (in the form of insurance certificates or policies and endorsements) of the following insurance coverages at the time of execution and delivery to the Owner under the Contract Agreement:

CONTRACTOR PROVIDED INSURANCE FOR NON-AIRSIDE PROJECT COVERAGE

<u>Type of Coverage</u>	<u>Minimum Limits</u>
Worker's Compensation	Statutory
Employee's Liability	\$1,000,000 Each Accident \$1,000,000 Disease – Policy Limit \$1,000,000 per Employee
Requirements:	1. Voluntary Compensation Endorsement 2. Waiver of Subrogation
General Liability	\$1,000,000 each occurrence \$2,000,000 General Aggregate \$2,000,000 Completed Operations/Products Aggregate \$2,000,000 Personal Injury \$5,000 Medical Payments
Requirements:	1. XCU Perils Coverage 2. Completed Operations Extended 3 Years 3. Broad Form Property Damage 4. Fellow Employee Coverage 5. Primary & Non-Contributory 6. Waiver of Subrogation 7. 30 Days Notice of Cancellation to Certificate Holder 8. CG2010 and CG2037 Endorsements 9. Contractual Liability applicable to Contractor's indemnification obligations
Business Automobile	\$2,000,000 per occurrence combined limit for bodily injury liability and property damage
Requirements:	1. Covers owned, non-owned and hired autos 2. Primary & Non-Contributory 3. Waiver of Subrogation 4. 30 Days Notice of Cancellation to Certificate Holder
Umbrella	\$5,000,000
Builder's Risk Policy	Amount of Project 1. Requirement: Contractor provide coverage for Contractor's equipment on the job site and all construction material and equipment which is schedule for the Work but has not been delivered to the Job Site 2. Coverage shall insure interest of Owner and Contractor 3. Provide Replacement Cost 4. Event of Loss, proceeds of any claim shall be paid to the Owner who shall apportion the proceeds between the Owner and the Contractor as their interest may appear 5. Coverage includes flood and earth movement 6. Per Project Aggregate

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

Pollution Policy \$1,000,000 (Depending on project)

Professional Liability \$1,000,000 (Depending on project) **CONTRACTOR PROVIDED INSURANCE**

FOR AIR-SIDE PROJECT COVERAGE

Type of Coverage

Minimum Limits

Worker's Compensation Statutory for Coverage A

Employee's Liability \$1,000,000 each Accident
\$1,000,000 Disease – Policy Limit
\$1,000,000 per Employee

Requirements:

- Voluntary Compensation Endorsement
- Waiver of Subrogation

General Liability \$1,000,000 each occurrence
\$10,000,000 General Aggregate
\$10,000,000 Completed Operations/Products Aggregate
\$1,000,000 Personal Injury
\$5,000 Medical Payments

Requirements:

- XCU Perils Coverage
- Completed Operations Extended 3 Years
- Broad Form Property Damage
- Fellow Employee Coverage
- Primary & Non-Contributory
- Waiver of Subrogation
- 30 Days Notice of Cancellation to Certificate Holder
- CG2010 and CG2037 Endorsements
- Contractual Liability applicable to Contractor's indemnification obligations

Business Automobile \$2,000,000 per occurrence combined limit for bodily injury liability and property damage

Requirements:

- Covers owned, non-owned and hired autos
- Primary & Non-Contributory
- Waiver of Subrogation
- 30 Days Notice of Cancellation to Certificate Holder

Umbrella \$10,000,000

Builder's Risk Policy Amount of Project

Requirement:

7. Contractor provide coverage for Contractor's equipment on the job site and all construction material and equipment which is schedule for the Work but has not been delivered to the Job Site
8. Coverage shall insure interest of Owner and Contractor
9. Provide Replacement Cost

10. Event of Loss, proceeds of any claim shall be paid to the Owner who shall apportion the proceeds between the Owner and the Contractor as their interest may appear
11. Coverage includes flood and earth movement
12. Per Project Aggregate

Pollution Policy	\$5,000,000	(Depending on project)
Professional Liability	\$1,000,000	(Depending on project)

2. GENERAL INSURANCE REQUIREMENTS FOR CONTRACTOR

2.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in Alabama (which company or companies shall, at a minimum, have a rating of not less than "A" as to management and "VII" as to strength in the latest edition of Best's Insurance Guide), such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. If the Owner requires that the insurance requirements set forth in the Contract Documents be varied, the Contractor agrees to enter into suitable modifications of the provisions hereof, provided the Owner bears any additional cost reasonably occasioned thereby. The Contractor's insurance shall include the following coverages in the amounts set forth in Subsection 1 of this Section 002800:

- 2.1.1 Workers' Compensation to cover full liability under the Workers' Compensation laws of the State of Alabama.
- 2.1.2 Employer's Liability.
- 2.1.3 Bodily injury, including damages for care and loss of services, because of bodily injury, occupational sickness or disease, or death at any time resulting therefrom, sustained by any person or persons.
- 2.1.4 Personal Injury, including damages for care and loss of services, because of personal injury, including death at any time resulting therefrom, sustained by any person or persons.
- 2.1.5 Property Damage for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom.
- 2.1.6 Automobile Liability for all owned, non-owned and hired automobiles and other vehicles used in connection with the Work or arising out of ownership, maintenance or use of a motor vehicle. And
- 2.1.7 Contractual Liability applicable to the Contractor's indemnification obligations under Subsection 5 of this Section 002800.

2.2 Coverages, whether written on an occurrence or claims made basis, shall be maintained without interruption from date of commencement of the Work until date of Final Payment and termination of any coverage required to be maintained after Final Payment. **If the Contractor's coverage is written on a claims made basis, the Contractor shall also provide tail coverage to include claims made after the completion of the Work.**

- 2.3** Certificates of Insurance shall be filed with the Owner prior to commencement of the Work on a Certificate of Insurance form, or Certificates, policies, or endorsements acceptable to the Owner. If such insurance coverages are required to remain in force after Final Payment, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment by the Contractor. Information concerning reduction or cancellation of coverage shall be immediately furnished by the Contractor to the Owner.
- 2.4** If the Owner or its insurance carrier requests the Contractor to provide new or additional insurance coverage or terms other than the insurance required herein, the Contractor agrees to enter into such suitable modifications of its coverages provided the Owner bears any additional costs reasonably occasioned thereby.
- 2.5** The Contractor shall provide coverage for the Contractor's equipment on the job site and all construction material and equipment which is scheduled for the Work but has not been delivered to the job site with an All Risk Builder's Risk Insurance Policy or with an Installation Floater Policy, insuring the interest of the Owner and the Contractor and providing replacement cost coverage, which insurance shall include but not be limited to the perils of fire, lightning, windstorm, hurricane, hail, explosions, riot, vandalism, and malicious mischief. In the event of loss covered by this insurance, the proceeds of a claim shall be paid to the Owner, who shall apportion the proceeds between the Owner and the Contractor as their interests may appear.

3. PAYMENT AND PERFORMANCE BOND REQUIREMENTS.

- 3.1** A Performance Bond and a Payment Bond in the exact form set forth in Sections 000820 and 000830 hereof, each in an initial amount of not less than the Total Contract Price, will be required of the Contractor (a) to guarantee faithful performance of the requirements of the Contract Documents, including all applicable warranties; and (b) to guarantee the payment of all costs for labor, materials, or supplies used directly or indirectly in the prosecution of the Work provided for in the Contract.

The Penal Sum of the Performance Bond and the Payment Bond shall be increased or decreased automatically during the course of the Work in the event that Contract Modifications or Addenda increase or decrease the Total Contract Price so that the Penal Sum of each bond shall be in an amount equal to the Total Contract Price at the completion of the Work.

The Bonds shall be written through a licensed Alabama agency on behalf of a surety company licensed to do business in Alabama meeting the following requirements:

- 3.1.1 Qualification - Management and Strength:** For Contracts in which the Total Contract Price exceeds \$100,000, the Surety must be rated no less than "A" as to management and no less than "VII" as to strength, by the latest edition of Best's Insurance Guide, published by A.M. Best Company, Post Office Box 1107, Summit, New Jersey 08901.
- 3.1.2 Qualification - Federal Project Approval:** The Surety company executing the Bonds shall be on current list of the U.S. Treasury Department as being approved by and for writing bonds for Federal projects in an amount not less than the Penal Sum of the Bonds provided to Owner.
- 3.1.3 Bonding Limit - Any One Risk:** The bonding limit of the Sureties shall not exceed five percent (5%) of the policyholder surplus (capital and surplus) as listed by the aforementioned Best's Insurance Guide.

- 3.2** The Contractor shall, before commencing with the Work, record a copy of the Performance Bond and Payment Bond in the Jefferson County clerk's office pursuant to Alabama Statute. Upon request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the applicable bond or shall permit a copy to be made. **Information concerning reduction or cancellation of coverage shall be immediately furnished by the Contractor to the Owner.**
- 3.3** If the Surety on any Bond furnished by the Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated or suspended in any state or it ceases to meet the requirements defined in Subsection 3.1 hereof, the Contractor shall within ten (10) days thereafter substitute another Bond and Surety, both of which must comply with the Contract requirements. Failure of the Contractor to do so shall constitute a default under the Contract.

4. INDEMNIFICATION.

- 4.1 Indemnity.** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, OAR, and their respective officers, officials, agents, subconsultants and employees from and against any and all claims, damages, actions, suits, liabilities, losses demands and/or expenses, including all reasonable costs for investigation and defense thereof (including but not limited to attorneys' fees, court costs and expert fees) arising out of or resulting from performance of the Work or the operations of the Contractor or its Subcontractors or suppliers; or on account of or in consequence of any neglect in safeguarding the Work; or because of any act or omission, neglect or misconduct of the Contractor or its Subcontractors or suppliers; or because of any Claims or amounts attributable to any alleged or actual infringement of patent, trademark, copyright of other intellectual property right of any third party; or from Claims or amounts arising or properly recoverable under applicable Worker's Compensation laws, or any other law, ordinance or decree. Money due to the Contractor under and by virtue of the 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, the Surety may be held until such suit or suits, actions, or claims for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due to the Contractor will not be withheld when the Contractor produces satisfactory evidence that it is adequately protected by public liability insurance and property damage insurance. In accordance with Alabama Statutes, the sum of \$1,000.00 and other good, valuable and adequate consideration has been provided to the Contractor for this indemnification obligation, and Contractor acknowledges the receipt and sufficiency of such consideration. The Contractor shall also indemnify and hold harmless the Owner and its members, officers, officials, agents and employees against any assertion of Claims for failure of payment, or failure to provide appropriate bonds, made by Subcontractors or material suppliers, and against any assertions of security interests by suppliers of goods, services or materials. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Subsection 4 of Section 002800.
- 4.3 No Third Party Beneficiary.** It is specifically agreed between the Contractor and Owner that it is not intended by any of the provisions or any part of this Contract to make any person or entity that is not a party to this Contract or the public or any member thereof a third party beneficiary of the Contract 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.

ATTACHMENT "A"
Notice to Contractor's Insurance Agent or Broker

Your insured is required to provide evidence of insurance to the Birmingham Airport Authority (the "Owner") and to submit to the Owner an executed original of this Notice to Contractor's Insurance Agent or Broker in connection with a contract between the Owner and your insured. In order to fulfill your insured's obligations, the Owner requires copies of the declaration page(s) of the policy and endorsements OR completion of an ACORD Certificate of Insurance modified to delete the wording: "This certificate is issued as a matter of information only and confers no rights upon the certificate holder" AND "endeavor to" AND "But failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives."

In order for your insured's evidence of insurance to be acceptable to the Owner, you must affirm (check) all items on the following checklist:

- _____ I represent to the Owner that I am authorized by each of the insurers to complete a Certificate of Insurance in the form required by the Owner.
- _____ A copy of this certificate has been sent to each of the insurers.
- _____ I have obtained the A.M. Best Rating for each insurer from the _____ (date of latest) edition of Best's Insurance Reports, and all insurers are rated not less than "A" as to management and "VII" as to strength in such edition.
- _____ I am aware that the Owner requires confirmation that the Policy is Primary to Airport Authority's insurance and a 60-day notification of any substantial changes in coverages or non-renewal or termination or cancellation of the policies.
- _____ I have requested that the general liability insurer, automobile liability insurer and excess insurer endorse their policies to state: "The Birmingham Airport Authority, the City of Birmingham, Alabama and their respective directors, council members, agents and employees, including, with limits, the OAR are hereby included as additional insured as required by the terms of the Contract between the named insured and the Birmingham Airport Authority."
- _____ None of the policies (except excess liability) contain a self-insured retention or deductible provision with respect to third party coverage. If you cannot affirm this statement, please specify whether or not the policy contains a self-insured retention or deductible amount.
- _____ Self-Insured Retention OR _____ Deductible; Amount \$ _____
- _____ All of the insurers shown on the Certificates of Insurance are authorized to write the coverage shown in the State of Alabama.
- _____ I have completed this checklist, and my signature appears below and on the Certificates of Insurance provided.

Broker/Agent for: _____ By: _____

Name & Title

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SECTION 00 29 00
CLAIMS AND DISPUTES; DISPUTE RESOLUTION

1. **Time Limits and Claim Substantiation.** Except as provided in Subsection 5 hereof, Claims by either party must be made within fourteen (14) Days after the occurrence of the event giving rise to such Claim or within fourteen (14) Days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be made by written notice and contain a thorough description of the basis of the Claim with a copy to the other party, the Engineer and the OAR. The responsibility to substantiate Claims shall rest with the party making the Claim. All monetary Claims shall be substantiated as soon as reasonably possible by an itemized, detailed cost breakdown, stating applicable unit prices, quantities, mark-ups, and time impacts, sufficient to analyze the value and impact of the Claim. An additional Claim made after the initial Claim has been acted upon by Change Order will not be considered unless submitted in a timely manner. **Failure to comply with the time requirements for notices and responses to requests for quantification of Claims for monetary damages shall result in a waiver of the applicable Claim.** Under no circumstances shall the Contractor be entitled to demand or recover from the Owner any indirect, incidental, special, or consequential damages in any proceeding arising out of or relating to this Contract or the breach thereof.
2. **Continuing Contract Performance.** Pending final resolution of a Claim, including the procedures for arbitration of disputes set forth in Subsections 8 and 9 of this Section 002900, the Contractor shall proceed diligently with performance of the Work, and the Owner shall continue to make payments of undisputed amounts in accordance with the Contract Documents.
3. **Waiver of Claims: Final Payment.** The acceptance of Final Payment shall constitute a waiver of Claims by the Owner except those arising from:
 - 3.1 Liens, Claims, security interests or encumbrances arising out of the Contract, set forth by the Contractor in writing and unsettled at the time Final Payment is made;
 - 3.2 Latent defects;
 - 3.3 Failure of the Work to comply with the requirements of the Contract Documents;
 - 3.4 Terms of special warranties required by the Contract Documents; or
 - 3.5 Any Claim for overpayment, including, but not limited to, those resulting directly or indirectly from any erroneous measurement, estimate or quantity.
4. **Claims for Concealed or Unknown Conditions.** If conditions are encountered at the site which are (a) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or (b) unknown physical conditions of an extraordinary nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then the Contractor shall give notice to the Owner, the OAR and the Engineer promptly before conditions are disturbed and in no event later than seven (7) Days after first observance of the conditions.

The Engineer shall promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, shall recommend to the Owner an equitable adjustment in the Total Contract Price or the Contract Time, or both. If the Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Engineer shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within seven (7) Days after the Engineer has given notice of the decision. If unforeseen or concealed site conditions are encountered, entitlement to adjustments in the Total Contract Price shall be limited to the increase or decrease in the cost of performing the Work, directly arising from such condition. The Contractor shall not be entitled to additional monetary compensation for any delays incurred as a result of unforeseen or concealed site conditions unless the critical path is directly impacted.

5. **Claims for Additional Cost.** If the Contractor intends to make a Claim for an increase in the Total Contract Price, the contractor shall provide written notice thereof to the Owner, the OAR and Engineer, in accordance with the procedures set forth in Section 1, before proceeding to execute the Work. For all such Claims, including but not limited to those claims relating to (a) a written interpretation from the Engineer, (b) a written order for a Minor Change in the Work issued by the Engineer or OAR, or (c) other reasonable grounds, the Claim shall be filed in accordance with the procedure established herein. Prior notice is not required for a Claim relating to an emergency endangering life or property as is set forth in Subsection 3 of Section 00200 of this Contract.

6. **Claims for Adjustment of Time**

6.1 If the Contractor intends to make a Claim for an adjustment in the Contract Time, written notice shall be given to the Owner, the Engineer and OAR in accordance with the procedures set forth in Section 1. The Contractor's Claim for an adjustment of the Contract Time must be substantiated by a critical path analysis of the impact to the most recent approved Baseline or Progress Schedules. The critical path analysis must identify all activities impacted by Owner-caused or Contractor-caused delays, and separately identify and segregate delays caused solely by Owner or Contractor from any concurrent delays. In the case of a continuing delay, only one Claim is necessary.

6.2 If unusual or abnormal inclement weather conditions are the basis for a Claim for adjustment of time, such Claim shall be documented by National Weather Service data for Birmingham-Shuttlesworth International Airport (BIA) substantiating that weather conditions were unusual or abnormal for the period of time as compared to the average weather conditions for BIA over the preceding ten (10) years and could not have been reasonably anticipated, and the extent to which weather conditions had an adverse effect on critical path construction activities.

7. **Injury or Damage to Person or Property.** If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, of any of the other party's employees or agents, or of others for whose acts such party is legally liable, written notice of such Claim for injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding fourteen (14) Days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. If a Claim for additional cost or time related to this Claim is to be asserted, it shall be filed as provided in Subsections 5 or 6, as applicable.

8. ARBITRATION OF DISPUTES UP TO \$100,000

- 8.1 Controversies and Claims Subject to Arbitration.** Any controversies or Claims arising out of or related to the Contract, or the breach thereof, the aggregate alleged value of which are \$100,000 or less, exclusive of interest, costs and attorneys' fees, shall be settled by arbitration before an arbitrator in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof, except controversies waived or waived as a result of the failure of the party making the Claim to follow the procedures for setting forth a Claim as provided for in the Contract Documents. Subject or Claims relating to aesthetic effect and except those Claims expressly to the foregoing sentence, Claims shall be subject to arbitration upon written demand of either party.
- 8.2 Rules and Notices for Arbitration.** If Claims are subject to arbitration under Subsection 8.1, notice of demand for arbitration shall be filed in writing with the other party to the Contract, with the Engineer and with the American Arbitration Association. Discovery for any arbitration proceeding shall be limited to production of records as outlined in Subsection 9.2 or any applicable public records law. There shall be no depositions.
- 8.3 Timely Assertion of Claims.** In no event shall a demand for arbitration be made after the date when institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations.
- 8.4 Claims and Amendments.** A party who files a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded. If a party fails to assert all such Claims, such Claims shall be deemed waived. Notwithstanding the foregoing, when a party fails to include a Claim through oversight, inadvertence or excusable neglect, or when a Claim has matured or been acquired subsequent to the initial filing of a demand for arbitration, the arbitrator may permit amendment.
- 8.5 Judgment on Final Award.** The award rendered by the arbitrator shall be final, and judgment may be entered upon it in accordance with applicable law in the Circuit or Federal court identified in Subsection 9.1.

9. RESOLUTION OF DISPUTES GREATER THAN \$100,000

- 9.1** Any Claim, dispute or other matter in question arising out of or relating to the Contract Documents or the breach thereof, the alleged value of which is over \$100,000, exclusive of interest, costs and attorneys' fees, except for Claims which have been waived by the making and acceptance of Final Payment, shall be brought only in the Circuit Court and for Jefferson County, Alabama or the United States District Court for the Middle District of Alabama.
- 9.2** The Contractor shall, within ten (10) Days after delivery of notice from the Owner or Engineer, produce for examination by the Owner, Engineer or an authorized representative of either of them, all of the Contractor's records related to the Work, including, but not limited to, books of account, bills, invoices, payrolls, Subcontracts, Subcontractor payment requests, time sheets/cards, progress records, daily logs, daily reports, and cost accounting records, regarding all of the Contractor's acts and transactions in connection with or relating to or arising by reason of the Contract, and submit itself and any persons in its employ, for examination under oath by any person designated by the Owner or Engineer to investigate any Claims made under this Contract.

The Contractor's failure to furnish the requested information or appear for examination shall result in the Contractor's waiver and release of all Claims arising out of, relating to, or by reason of this Contract, except for the sums certified by the Owner or Engineer to be due under the provisions of the Contract. It is further stipulated and agreed that no person or entity has power to waive any of the foregoing provisions, and that in any action against the Owner to recover any sum in excess of the sums certified by the Engineer or Owner to be due under or by reason of this Contract, the Contractor must allege in its complaint and prove, at the trial, compliance with the provisions of this Section. In addition to the foregoing, to the extent any Claim by the Contractor includes any Claims by Subcontractors, arising under or by reason of this Contract, the Owner shall also have the right through its designees, upon written notice, to require the Subcontractor to produce the above described books and documents of the Subcontractor and to submit itself and persons in its employ to examination under oath, within ten (10) Days from delivery of notice from the Owner.

- 9.3** For any Claim made by the Contractor against the Owner, the basis of which is a Claim by a Subcontractor, or any other person or entity under the Contractor's control, for acts or omissions allegedly attributable to the Owner, the Contractor must certify under oath that it has carefully examined the Subcontractor's Claim and has verified the truth and accuracy of such Claim.
- 9.4** All Claims, disputes or other matters in question arising out of or relating to the Contract Documents, with an alleged value over \$100,000, exclusive of interest, costs and attorneys' fees, shall be subject to mandatory mediation under the auspices of a mediator to be selected by the parties. Mediation may be scheduled before a lawsuit is filed, but must occur no later than 90 Days after a lawsuit has been filed. Discovery prior to the scheduled mediation shall be limited to one (1) request for production of documents and two (2) depositions per party not exceeding 8 hours total time per party. Each party shall equally bear the costs of mediation and shall be solely responsible for its own attorneys' fees and other legal costs prior to and during the mediation process. In the event the case does not settle at mediation, the parties may re-depose either or both witnesses on non-repetitive matters.

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SECTION 00 31 00
MISCELLANEOUS CONTRACT PROVISIONS

1. **Convict Labor.** No convict labor may be employed under this Contract.

NOTE: The term "convict" is defined as any person undergoing a sentence of confinement pursuant to the order of a court. It would not include persons who are on regular parole or probation, persons released from confinement on a daily basis, under a statutory state or federal "Work-release" program to Work on a construction Project as a laborer or a mechanic for a Contractor or Subcontractor. Persons thus released should not be placed under guard or treated in any way as convicts while at Work or in transit to and from the Project.

2. **Withholding of Payments.** The Owner may withhold accrued payments or advances as may be considered necessary to pay laborers and mechanics employed by the Contractor or any Subcontractor on the Work the full amount of wages required by this Contract.
3. **Nonpayment of Wages.** If the Contractors or Subcontractor fails to pay any laborer or mechanic employed or working on the site of the Work any of the wages required by this Contract, the Owner, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment or advance of funds to the Contractor or Subcontractor until the violations cease.
4. **Subcontracts.** The Contractor shall insert in each of its Subcontracts the provisions contained in Subsections 1, 2, 3, 4 and 5 of this Section and also a clause requiring the Subcontractors to include these provisions in any lower tier Subcontractors which they may enter into, together with a clause requiring this insertion in any further Subcontracts that may in turn be made.
5. **Contract Termination.** A breach of Subsections 1, 2 or 5 may be grounds for termination of the Contract.

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SECTION 00 32 00
STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered, and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he/she desires.

1. Name of Bidder _____
2. Permanent main office address _____

3. When organized _____
4. If a corporation, where incorporated _____
5. How many years engaged in the business related to this Project under present firm or trade name? Give former names of firm or trade names, with dates of operation under each _____

6. General character of work performed by your company _____

7. Have you ever failed to complete any work awarded to you? If so, where and why? Give name of Owner _____

8. Have you ever defaulted on a contract? If so, where and why? Give name of Owner. _____

9. Have you ever sued an Owner of a project? If so, where and why? Give name of Owner _____

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10. Have you ever sued a consultant or subconsultant representing the Owner of a project? If so, where and why?

Give name of Owner. _____

11. Have you ever been terminated by the Owner of a project? If so, where and why? Give name of Owner _____

12. Experience in work similar in importance to this project _____

13. List of equipment that would be available for use on this project _____

14. Background and experience of the principal members of your organization, including the officers _____

15. Give bank references _____

16. Will you, upon request, fill out a detailed financial statement and furnish any other pertinent information that may be required by Birmingham Airport Authority? _____

17. The undersigned hereby authorizes and requests any persons, firm or corporation to furnish any information requested by the Birmingham Airport Authority, in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated at _____, this _____ day of _____ 20__.

(Contractor)

By: _____

Title: _____

State of _____

License Number _____

Date of License _____

_____, being duly sworn deposes and says that he/she is _____
_____ of _____ and that the answers to the foregoing questions and
all statements therein contained are true and correct.

SUBSCRIBED AND SWORN to before me this _____ day of _____, 20__.

Notary's Signature

Notary's Printed Name

NOTARY PUBLIC, STATE OF _____

My commission expires:

_____, 20__

END OF SECTION

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**SECTION 00 33 00
DRUG-FREE WORKPLACE ACT CERTIFICATION**

1. The contractor certifies that it will provide a drug-free workplace by:
 - a. Publishing a statement notifying employees that unlawfully manufacturing, distributing, possessing or using a controlled substance in the contractor's workplace is prohibited and specifying the actions that will be taken against employees for violation of such prohibition.
 - b. Establishing a drug-free awareness program to inform employees about:
 - (1) the dangers of drug abuse in the workplace.
 - (2) the contractor's policy of maintaining a drug-free workplace.
 - (3) any drug counseling, rehabilitation, and employee assistance programs that are available; and
 - (4) the penalties that may be imposed upon employees for drug abuse violations in the workplace.
 - c. Making it a requirement that each employee to be engaged in the performance of the contract be given a copy of the statement required by paragraph (a).
 - d. Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the contract the employee will:
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such a conviction.
 - e. Notifying Birmingham Airport Authority within ten (10) days after receiving notice under sub-paragraph (d) (2), from an employee or otherwise receiving actual notice of such conviction.
 - f. Taking one of the following actions, within thirty (30) days of receiving notice under sub-paragraph (d) (2), with respect to any employee so convicted:
 - (1) Taking appropriate personnel action against such an employee, up to and including termination; or
 - (2) Requiring such an employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or Local health, law enforcement, or other appropriate agency.
 - g. Making a good faith effort to continue to maintain a drug free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).
2. The contractor's headquarters is located at the following address. The addresses of all other workplaces maintained by the contractor are provided on the accompanying list.

Name of Contractor: _____

Street Address: _____

City: _____

County: _____

State: _____

Zip Code: _____

Signed by: _____

Print or Type Name and Title: _____

Date: _____

END OF SECTION

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SECTION 32 12 16 ASPHALT PAVING

1. General Requirements

This section specifies furnishing, placing, and compacting hot mix asphalt (HMA) for paving surfaces such as taxiways, access roads, and related areas. All work shall comply with FAA specifications (e.g., P-401 or P-403) and ASTM standards as applicable. Submittals shall include mix designs, product data sheets, material certifications, and quality control test results.

2. Products

a. Asphalt Binder

Use a Performance Graded (PG) binder, such as PG 64-22, suitable for local climate and anticipated loadings. Binder shall meet AASHTO M320 specifications.

b. Aggregates

Aggregates shall be clean, durable, and angular crushed stone or gravel conforming to FAA and ASTM gradation standards. They shall be free of clay, shale, or other deleterious materials.

c. Hot Mix Asphalt (HMA)

HMA shall be plant-mixed and produced per the approved Job Mix Formula (JMF). Design must meet project-specific requirements for surface, intermediate, and base courses.

d. Tack Coat

Use emulsified asphalt (CSS-1h or SS-1h) applied between lifts to promote bonding. Application rate shall follow FAA and manufacturer recommendations.

3. Execution

a. Subgrade Preparation

Prepare subgrade by grading and compacting to the specified elevation and density. Remove and replace unsuitable materials.

b. Prime Coat (If required)

Apply a prime coat of asphalt cutback to untreated aggregate base before asphalt placement, if specified.

c. Placement

Place asphalt at appropriate temperature using self-propelled paving machines. Ensure proper lift thickness and joint alignment. Compact immediately using rollers in a consistent pattern.

d. Compaction

Achieve compaction between 92%–96% of maximum theoretical density. Use appropriate equipment and follow FAA-approved rolling pattern.

e. Joints

Construct longitudinal and transverse joints cleanly. Treat cold joints with tack coat and cut edges as needed to ensure a strong bond.

4. Quality Control

Conduct field tests including density (nuclear gauge), temperature checks, and smoothness evaluation using straightedge or profilograph. Submit all QC data for approval before proceeding to subsequent phases.

5. Protection and Cleanup

Protect freshly placed asphalt from all traffic until adequately cooled and cured. Clean up excess materials and restore adjacent surfaces as needed.

6. Measurement and Payment

Measurement will be by square yard or ton of compacted asphalt. Separate pay items may apply for tack coat, milling, and striping.

END OF SECTION

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Section 10 Definition of Terms

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

Paragraph Number	Term	Definition
10-01	AASHTO	The American Association of State Highway and Transportation Officials.
10-02	Access Road	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
10-03	Advertisement	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
10-04	Airport	Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; airport buildings and facilities located in any of these areas, and a heliport.
10-05	Airport Improvement Program (AIP)	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
10-06	Air Operations Area (AOA)	The term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
10-07	Apron	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	ASTM International (ASTM)	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	Award	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	Bidder	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.

Paragraph Number	Term	Definition
10-11	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.
10-12	Calendar Day	Every day shown on the calendar.
10-13	Certificate of Analysis (COA)	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
10-14	Certificate of Compliance (COC)	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	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 work within the scope of the contract and necessary to complete the project.
10-16	Contract	A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment. The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.
10-17	Contract Item (Pay Item)	A specific unit of work for which a price is provided in the contract.
10-18	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.
10-19	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.
10-20	Contractors Quality Control (QC) Facilities	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).

Paragraph Number	Term	Definition
10-21	Contractor Quality Control Program (CQCP)	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
10-22	Control Strip	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.
10-23	Construction Safety and Phasing Plan (CSPP)	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.
10-24	Drainage System	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
10-25	Engineer	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
10-26	Equipment	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
10-27	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 Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	FAA	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	Federal Specifications	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.

Paragraph Number	Term	Definition
10-30	Force Account	a. Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis. b. Owner Force Account - Work performed for the project by the Owner's employees.
10-31	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 and/or Resident Project Representative (RPR) is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner. 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.
10-32	Lighting	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	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% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	Materials	Any substance specified for use in the construction of the contract work.
10-35	Modification of Standards (MOS)	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	Notice to Proceed (NTP)	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.
10-37	Owner	The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term

Paragraph Number	Term	Definition
		“Owner” is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project The Birmingham Airport Authority (BAA)
10-38	Passenger Facility Charge (PFC)	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	Pavement Structure	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	Payment bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.
10-41	Performance bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	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, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
10-43	Project	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	Proposal	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
10-45	Proposal guaranty	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	Quality Assurance (QA)	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	Quality Control (QC)	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.

Paragraph Number	Term	Definition
10-48	Quality Assurance (QA) Inspector	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
10-49	Quality Assurance (QA) Laboratory	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	Resident Project Representative (RPR)	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
10-51	Runway	The area on the airport prepared for the landing and takeoff of aircraft.
10-52	Runway Safety Area (RSA)	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	Safety Plan Compliance Document (SPCD)	Details how the Contractor will comply with the CSPP.
10-54	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.
10-55	Sponsor	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
10-56	Structures	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.

Paragraph Number	Term	Definition
10-57	Subgrade	The soil that forms the pavement foundation.
10-58	Superintendent	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
10-59	Supplemental Agreement	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%; (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	Surety	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	Taxilane	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	Taxiway	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
10-63	Taxiway/Taxilane Safety Area (TSA)	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
10-64	Work	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
10-65	Working day	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.

END OF SECTION 10

Section 20 Proposal Requirements and Conditions

20-01 Advertisement (Notice to Bidders). See 00-02-00 ADVERTISEMENT FOR BID NOTICE

20-02 Qualification of bidders. Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Owner at the time of bid opening. Evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, and a list of equipment and a list of key personnel that would be available for the work.

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

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

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

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

A Prebid conference is required on this project to discuss as a minimum, the following items: material requirements; submittals; Quality Control/Quality Assurance requirements; the construction safety and phasing plan including airport access and staging areas; and unique airfield paving construction requirements. Time, date and place are listed in the advertisement for bids.

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

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

- d. Documented record of unsatisfactory work on previous contracts with the Owner.

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

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

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

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

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

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

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

- a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.

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

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

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

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

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

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

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

- a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.
- b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.
- c. If the bidder is considered to be in "default" for any reason specified in paragraph 20-04, Issuance of Proposal Forms, of this section.

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

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

END OF SECTION

Section 30 Award and Execution of Contract

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

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

- a. If the proposal is irregular as specified in Section 20, paragraph 20-09, Irregular Proposals.
- b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, Disqualification of Bidders.

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

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

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

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

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

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

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

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

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

END OF SECTION

Section 40 Scope of Work

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

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

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

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

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

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

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

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

When determined by the RPR to be in the Owner's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, Payment for Extra Work. Extra work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a supplemental agreement as defined in Section 10, paragraph 10-59, Supplemental Agreement.

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

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

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

- a. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to their own operations and the operations of all subcontractors as specified in Section 80, paragraph 80-04, Limitation of Operations. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in Section 70, paragraph 70-15, Contractor's Responsibility for Utility Service and Facilities of Others.
- b. With respect to their own operations and the operations of all subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport in accordance with the construction safety and phasing plan (CSPP) and the safety plan compliance document (SPCD).
- c. When the contract requires the maintenance of an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (<http://mutcd.fhwa.dot.gov/>), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

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

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

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Except as provided in Section 40, paragraph 40-07, Rights in and Use of Materials Found in the Work, it

is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the work as otherwise provided for in the contract and shall remain the property of the Owner when so used in the work.

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

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

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

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

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

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

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

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

END OF SECTION

Section 50 Control of Work

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

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

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

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

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

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

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

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

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

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

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

50-04 List of Special Provisions. Not Used

50-05 Cooperation of Contractor. The Contractor shall be supplied with five (5) hard copies or an electronic PDF of the plans and specifications. The Contractor shall have available on the construction site at all times one hardcopy each of the plans and specifications. Additional hard copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced

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in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, Contractor's Responsibility for Work.

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

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

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

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

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

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations. All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

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

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

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

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

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be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

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

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

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

END OF SECTION

Section 60 Control of Materials

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Owner's permission.

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

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

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

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

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

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

END OF SECTION

Section 70 Legal Regulations and Responsibility to Public

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

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

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

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

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

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

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

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

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

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

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

70-08 Construction Safety and Phasing Plan (CSPP). The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is on sheet C0.02 of the project plans.

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

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

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

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

70-11 Responsibility for damage claims. The Contractor shall indemnify and hold harmless the Engineer/RPR and the Owner and their officers, agents, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of their own contract considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, their own surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

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

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

The phases anticipated for this work, if any, are shown on the plans.

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

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

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

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

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

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

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

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70-15 Contractor's responsibility for utility service and facilities of others. As provided in paragraph 70-04, Restoration of Surfaces Disturbed by Others, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

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

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

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

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

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

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility. Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

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

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

70-15.1 FAA facilities and cable runs. The Contractor is hereby advised that the construction limits of the project include existing facilities and buried cable runs that are owned, operated and maintained by the FAA. The Contractor, during the execution of the project work, shall comply with the following:

- a. The Contractor shall permit FAA maintenance personnel the right of access to the project work site for purposes of inspecting and maintaining all existing FAA owned facilities.
- b. The Contractor shall provide notice to the FAA Air Traffic Organization (ATO)/Technical Operations/System Support Center (SSC) Point-of-Contact through the airport Owner a minimum of seven (7) calendar days prior to commencement of construction activities in order to permit sufficient time to locate and mark existing buried cables and to schedule any required facility outages.
- c. If execution of the project work requires a facility outage, the Contractor shall contact the FAA Point-of-Contact a minimum of 72 hours prior to the time of the required outage.
- d. Any damage to FAA cables, access roads, or FAA facilities during construction caused by the Contractor's equipment or personnel whether by negligence or accident will require the Contractor to repair or replace the damaged cables, access road, or FAA facilities to FAA requirements. The Contractor shall not bear the cost to repair damage to underground facilities or utilities improperly located by the FAA.
- e. If the project work requires the cutting or splicing of FAA owned cables, the FAA Point-of-Contact shall be contacted a minimum of 72 hours prior to the time the cable work commences. The FAA reserves the right to have a FAA representative on site to observe the splicing of the cables as a condition of acceptance. All cable splices are to be accomplished in accordance with FAA specifications and require approval by the FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is hereby advised that FAA restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA, the Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.

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

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

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

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

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

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

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

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

70-21 Insurance Requirements. See 00 28 00 INSURANCE AND BONDING REQUIREMENTS; INDEMNIFICATION.

END OF SECTION

Section 80 Execution and Progress

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

The Contractor shall perform, with his organization, an amount of work equal to at least 25% percent of the total contract cost. Should the Contractor elect to assign their contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

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

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

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

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

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

The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner. The project schedule shall be prepared as a network diagram in Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), or other format, or as otherwise specified. It shall include information on the sequence of

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work activities, milestone dates, and activity duration. The schedule shall show all work items identified in the project proposal for each work area and shall include the project start date and end date.

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

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

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

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

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

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

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

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

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

80-05 Character of workers, methods, and equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications. All workers shall have sufficient skill and experience to perform properly the work assigned to them.

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Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily. Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

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

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

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

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment.

The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

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

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

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

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80-07 Determination and extension of contract time. The number of calendar days shall be stated in the proposal and contract and shall be known as the Contract Time.

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

80-07.1 Contract time based on calendar days. 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 non-work 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.

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

Schedule	Liquidated Damages Cost	Allowed Construction Time
Total Project	\$2,000/Calendar Day	7 Calendar Days

Additional daily/nightly (shift) and "per phase" Liquidated Damages are defined in the Construction Safety and Phase Plans. See those sheets for details. The maximum construction time allowed for the project will be the sum of the time allowed for individual schedules but not more than 7 calendar days. Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its rights under the contract.

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

- a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or
- b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or
- c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- d. Discontinues the execution of the work, or

- e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or
- f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or
- h. Makes an assignment for the benefit of creditors, or
- i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

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

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

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

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

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

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

Acceptable materials obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the RPR.

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

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

END OF SECTION

Section 90 Measurement and Payment

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

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

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

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

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

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

Measurement of Payment

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

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

	Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted. In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%. In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded. Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them. Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment. 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.
Rental Equipment	Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 Payment for Extra Work.
Pay Quantities	When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

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

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

90-03 Compensation for altered quantities. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, Alteration of Work and Quantities, will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

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

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

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

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

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

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

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

- 1) Contractor may request release of retainage on work that has been partially accepted by the Owner in accordance with Section 50-14. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Owner for partially accepted work.
 - 2) In lieu of retainage, the Contractor may exercise at its option the establishment of an escrow account per paragraph 90-08.
- b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. Contractor must provide the Owner evidence of prompt and full payment of retainage held by the prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.
 - c. When at least 95% of the work has been completed to the satisfaction of the RPR, the RPR shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done. The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

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

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

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

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

- a. The material has been stored or stockpiled in a manner acceptable to the RPR at or on an approved site.
- b. The Contractor has furnished the RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.
- c. The Contractor has furnished the RPR with satisfactory evidence that the material and transportation costs have been paid.

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- d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.
- e. The Contractor has furnished the Owner evidence that the material stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

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

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

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

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

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

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

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

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

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

90-10 Construction warranty.

- a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.
- b. This warranty shall continue for a period of one year from the date of final acceptance of the work, except as noted. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Owner takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the project work.
- c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner real or personal property, when that damage is the result of the Contractor's failure to conform to contract requirements; or any defect of equipment, material, workmanship, or design furnished by the Contractor.
- d. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.
- e. The Owner will notify the Contractor, in writing, within seven (7) days after the discovery of any failure, defect, or damage.
- f. If the Contractor fails to remedy any failure, defect, or damage within 14 days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.
- h. This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

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

- a. Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.
- b. Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors.
- c. Complete final cleanup in accordance with Section 40, paragraph 40-08, Final Cleanup.
- d. Complete all punch list items identified during the Final Inspection.

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- e. Provide complete release of all claims for labor and material arising out of the Contract.
- f. Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project. When applicable per state requirements, return copies of sales tax completion forms.
- g. Manufacturer's certifications for all items incorporated in the work.
- h. All required record drawings, as-built drawings or as-constructed drawings.
- i. Project Operation and Maintenance (O&M) Manual(s).
- j. Security for Construction Warranty.
- k. Equipment commissioning documentation submitted, if required.

END OF SECTION

ITEM C-102 Temporary Air and Ground Traffic Control

102-1: Description. This specification provides requirements for the temporary control of aircraft and vehicle traffic, installation of safety barricades, signage, lighting, designated access points, and the protection of active airside surfaces and operational personnel.

102-2: Construction Methods. Outlines the required methods for implementing and maintaining temporary safety measures, including access routes, barricades, signage, fencing, and equipment visibility, to ensure safe and controlled movement within the construction site and adjacent airfield areas.

102.2.1: General. The Contractor shall coordinate with the Engineer and airport operations personnel to ensure continuous safety and maintain controlled access to all work areas in accordance with approved phasing and safety plans.

102-2.2: Access Routes and Haul Roads. The Contractor shall plan, establish, and maintain designated haul routes for construction vehicles. All routes that cross or impact aircraft movement areas shall be submitted for review and approved by the Engineer and airport operations prior to use.

102-2.3: Barricades, Lights, and Signs. The Contractor shall furnish, install, and maintain barricades, low-profile barricades on pavement surfaces, red obstruction lights, orange and white reflective markings, and appropriate construction signage as necessary to clearly delineate the limits of the work area and ensure airside operational safety.

102-2.4: Fencing and Security. The Contractor shall install and maintain temporary fencing as required to secure the construction site and prevent unauthorized personnel or equipment from entering aircraft movement areas.

102-2.5: Dust Control. The Contractor shall control dust generated by construction activities to prevent visibility hazards and ensure the safety of airside operations in accordance with the approved safety plan.

102-2.6: Marking and Flagging of Equipment. All construction vehicles and equipment operating on or in proximity to aircraft movement areas shall be properly marked and flagged with orange and white checkered flags and equipped with high-visibility identification in accordance with AC 150/5210-5.

102-3.1: Construction Safety Maintenance and Removal. The Contractor shall maintain all temporary traffic control and safety measures in good working condition for the duration of the project and shall remove them promptly upon completion of construction or when no longer required. The Contractor shall restore all areas disturbed by the installation or removal of these measures to their original condition or as directed by the Engineer.

METHOD OF MEASUREMENT

102-4: Measurement for temporary air and ground traffic control shall be made on a lump sum basis. The lump sum price shall include all labor, materials, equipment, installation, maintenance, and removal of temporary safety measures necessary to complete the work as specified.

BASIS OF PAYMENT

102-5: Payment shall be made at the contract lump sum price. This price shall be full compensation for all labor, materials, equipment, and incidentals required to complete the work as specified, including but not limited to:

- Planning and coordination with the Engineer and airport operations

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- Installation, maintenance, and removal of barricades, construction signage, and temporary fencing
- Equipment marking and flagging in accordance with AC 150/5210-5
- Restoration of all areas disturbed by the temporary control measures

No separate payment shall be made for maintenance, relocation, or removal of temporary measures; such costs shall be considered incidental to the lump sum price.

Payment will be made under:

Item C-102-4 Installing Construction Site Safety Measures

Item C-102-4 Removal of Construction Site Safety Measures

REFERENCES

AC 150/5210-5D	Painting, Marking, and Lighting of Vehicles Used on an Airport
AC 150/5370-2G	Operational Safety on Airports During Construction
AC 150/5340-1M	Standards for Airport Markings
AC 150/5340-18G	Standards for Airport Sign Systems
AC 150/5370-10H	FAA Standard Specifications for Construction of Airports
FAA Order 5100.38D	Airport Improvement Program (AIP) Handbook
Airport Layout Plan (ALP)	
Construction Safety and Phasing Plan (CSPP)	
FAA Engineering Briefs (e.g., EB-83A for low-profile barricades)	

END OF C-102 DOCUMENT

ITEM C-105 Mobilization

105-1 Description. This item of work shall consist of, 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.

105-2 Mobilization limit. Mobilization shall be limited to 10% of the total Project cost.

105-3 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.

105-4 Engineer/RPR field office. An Engineer/RPR field office is not required.

METHOD OF MEASUREMENT

105-5 Basis of measurement and payment. Based upon the contract lump sum price for “Mobilization” partial payments will be allowed as follows:

1. With first pay request, 25%.
2. When 25% or more of the original contract is earned, an additional 25%.
3. When 50% or more of the original contract is earned, an additional 40%.
4. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, Contractor Final Project Documentation, the final 10%.

BASIS OF PAYMENT

105-6 Payment will be made under:

Item C-105 Mobilization

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

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United States Department of Labor, Wage and Hour Division (WHD)
WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF SECTION

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ITEM P101 Preparation/ Removal of Existing Pavements

DESCRIPTION

101-1 This item shall consist of preparing existing asphalt pavement surfaces for patching, including saw-cutting, removal, cleaning, and application of tack coat in accordance with these specifications and as shown on the plans.

EQUIPMENT AND MATERIALS

101-2 All equipment and materials shall be specified here and in the following paragraphs or approved by the Resident Project Representative (RPR). The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 Removal of existing pavement.

The Contractor's removal operation shall be controlled to not damage adjacent pavement structure, and base material, cables, utility ducts, pipelines, or drainage structures which are to remain under the pavement.

- a. **Concrete pavement removal.** Not Used
- b. **Asphalt pavement removal.** Asphalt pavement to be removed shall be cut to the full depth of the asphalt pavement around the perimeter of the area to be removed. If the material is to be wasted on the airport site or incorporated into embankment, it shall be broken to a maximum size of **3 inches (75 mm)**. If the material is to be reused as base or fill, it shall meet the following gradation.

Gradation	
Sieve Size	Percent Passing
No. 4 (4.75 mm)	100
No. 8 (2.36 mm)	90-100
No. 16 (1.18 mm)	65-90
No. 30 (600 µm)	40-60
No. 50 (300 µm)	25-42
No. 100 (150 µm)	15-30
No. 200 (75 µm)	10-20

The pavement shall be removed so the joint for each layer of pavement replacement is offset **1 foot** from the joint in the preceding layer. This does not apply if the removed pavement is to be replaced with concrete or soil.

- c. **Repair or removal of Base, Subbase, and/or Subgrade.** Not used.

101-3.2 Preparation of joints and cracks prior to overlay/surface treatment. Not used.

101-3.3 Removal of Foreign Substances/contaminates prior to overlay. Not Used.

101-3.4 Failed Asphalt pavement repair. Contractor shall repair all patches as shown on the plans or as directed by the RPR. The failed areas shall be removed as specified in paragraph 101-3.1b. All failed material including surface, base course, subbase course, and subgrade shall be removed. Materials and methods of construction shall comply with the applicable sections of these specifications.

101-3.5 Cold milling. Not used

101-3.6. Preparation of asphalt pavement surfaces prior to surface treatment. Not Used.

101-3.7 Maintenance. The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the RPR. The surface shall be kept clean and free from foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

101-3.8 Preparation of Joints in Rigid Pavement prior to resealing. Not Used.

101-3.9 Removal of Existing Joint Sealant. Not Used.

METHOD OF MEASUREMENT

101-4.1 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. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal. Dowel bar installation shall be incidental to pavement removal.

101-4.4 Spalled and failed asphalt pavement repair. The unit of measure for failed asphalt pavement repair shall be square foot

BASIS OF PAYMENT

101-5.1 Payment. Payment shall be made at contract unit price for the unit of measurement as specified above. This price shall be full compensation for furnishing all materials and for all preparation, hauling, and placing of the material and for all labor, equipment, tools, and incidentals necessary to complete this item.

Item P 101-5.1 Pavement Removal - per square yard

Item P-101-5.4 Spalled and Failed Asphalt Pavement Repair - per square foot

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5380-6 Guidelines and Procedures for Maintenance of Airport Pavements.
ASTM International (ASTM)

ASTM D6690 Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

END OF ITEM P-101

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ITEM P401 Asphalt Mix Pavement – Binder Course

DESCRIPTION

401-1.1 This item shall consist of pavement courses composed of mineral aggregate and asphalt binder mixed in a central mixing plant and placed on a prepared base or stabilized course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

401-2.1 Aggregate. Aggregates shall consist of crushed stone, crushed gravel, crushed slag, screenings, natural sand, and mineral filler, as required. The aggregates should have no known history of detrimental pavement staining due to ferrous sulfides, such as pyrite. Coarse aggregate is the material retained on the No. 4 (4.75 mm) sieve. Fine aggregate is the material passing the No. 4 (4.75 mm) sieve.

- a. **Coarse aggregate.** Coarse aggregate shall consist of sound, tough, durable particles, free from films of matter that would prevent thorough coating and bonding with the asphalt material and free from organic matter and other deleterious substances. Coarse aggregate material requirements are given in the table below.

Coarse Aggregate Material requirements

Material Test	Requirement	Standard
Resistance to Degradation	Loss: 40% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0 % maximum	ASTM C142
Percentage of Fractured Particles	For pavements designed for aircraft gross weights of 60,000 pounds (27200 kg) or more: Minimum 75% by weight of particles with at least two fractured faces and 85% with at least one fractured face ¹	ASTM D5821
	For pavements designed for aircraft gross weights less than 60,000 pounds (27200 kg): Minimum 50% by weight of particles with at least two fractured faces and 65% with at least one fractured face ¹	
Flat, Elongated, or Flat and Elongated Particles	8% maximum, by weight, of flat, elongated, or flat and elongated particles at 5:1 ²	ASTM D4791
Bulk density of slag ³	Weigh not less than 70 pounds per cubic foot (1.12 Mg/cubic meter)	ASTM C29.

¹ The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

² A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

³ Only required if slag is specified.

- b. Fine aggregate.** Fine aggregate shall consist of clean, sound, tough, durable, angular shaped particles produced by crushing stone, slag, or gravel and shall be free from coatings of clay, silt, or other objectionable matter. Natural (non-manufactured) sand may be used to obtain the gradation of the fine aggregate blend or to improve the workability of the mix. Fine aggregate material requirements are listed in the table below.

Fine Aggregate Material requirements		
Material Test	Requirement	Standard
Liquid limit	25 maximum	ASTM D4318
Plasticity Index	4 maximum	ASTM D4318
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 10% maximum using Sodium sulfate - or - 15% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0% maximum	ASTM C142
Sand equivalent	45 minimum	ASTM D2419
Natural Sand	0% to 15% maximum weight of total aggregate	ASTM D1073

- c. Sampling.** ASTM D75 shall be used in sampling coarse and fine aggregate.

401-2.2 Mineral filler. Mineral filler (baghouse fines) may be added in addition to material naturally present in the aggregate. Mineral filler shall meet the requirements of ASTM D242.

Mineral Filler Requirements		
Material Test	Requirement	Standard
Plasticity Index	4 maximum	ASTM D4318

401-2.3 Asphalt binder. Asphalt binder shall conform to **ASTM D6373** and be of **Performance Grade (PG) 64-22**, suitable for the climatic conditions of Birmingham, Alabama, as per FAA guidelines. **PG 70-22 shall be used if recommended by the FAA**, and such a recommendation shall **supersede the Engineer's selection** of PG 64-22.

Asphalt Binder PG Plus Test Requirements		
Material Test	Requirement	Standard
Elastic Recovery	75% minimum	ASTM D6084 ¹

¹ Follow procedure B on RTFO aged binder.

401-2.4 Anti-stripping agent. Any anti-stripping agent or additive (anti-strip) shall be heat stable and shall not change the asphalt binder grade beyond specifications. Anti-strip shall be an approved material of the Department of Transportation of the State in which the project is located.

COMPOSITION

401-3.1 Composition of mixture(s). The asphalt mix shall be composed of a mixture of aggregates, filler and anti-strip agent if required, and asphalt binder. The aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

401-3.2 Job mix formula (JMF) laboratory. The laboratory used to develop the JMF shall possess a current certificate of accreditation, listing D3666 from a national accrediting authority and all test methods required for developing the JMF; and be listed on the accrediting authority's website. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Resident Project Representative (RPR) prior to start of construction.

401-3.3 Job mix formula (JMF). No asphalt mixture shall be placed until an acceptable mix design has been submitted to the RPR for review and accepted in writing. The RPR's review shall not relieve the Contractor of the responsibility to select and proportion the materials to comply with this section.

When the project requires asphalt mixtures of differing aggregate gradations and/or binders, a separate JMF shall be submitted for each mix. Add anti-stripping agent to meet tensile strength requirements.

The JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 401-3.2. The asphalt mixture shall be designed using procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. Samples shall be prepared and compacted using the gyratory compactor in accordance with ASTM D6925.

Should a change in sources of materials be made, a new JMF must be submitted to the RPR for review and accepted in writing before the new material is used. After the initial production JMF has been approved by the RPR and a new or modified JMF is required for whatever reason, the subsequent cost of the new or modified JMF, including a new control strip when required by the RPR, will be borne by the Contractor.

The RPR may request samples at any time for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

The JMF shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations. The JMF shall be developed within the same construction season using aggregates proposed for project use.

The JMF shall be dated, and stamped or sealed by the responsible professional Engineer of the laboratory and shall include the following items as a minimum:

- Manufacturer's Certificate of Analysis (COA) for the asphalt binder used in the JMF in accordance with paragraph 401-2.3. Certificate of asphalt performance grade is with modifier already added, if used and must indicate compliance with ASTM D6373. For plant modified asphalt binder, certified test report indicating grade certification of modified asphalt binder.
- Manufacturer's Certificate of Analysis (COA) for the anti-stripping agent if used in the JMF in accordance with paragraph 401-2.4.
- Certified material test reports for the course and fine aggregate and mineral filler in accordance with paragraphs 401-2.1.
- Percent passing each sieve size for individual gradation of each aggregate cold feed and/or hot bin; percent by weight of each cold feed and/or hot bin used; and the total combined gradation in the JMF.
- Specific Gravity and absorption of each coarse and fine aggregate.
- Percent natural sand.
- Percent fractured faces.
- Percent by weight of flat particles, elongated particles, and flat and elongated particles (and criteria).
- Percent of asphalt.
- Number of blows or gyrations

- Laboratory mixing and compaction temperatures.
- Supplier-recommended field mixing and compaction temperatures.
- Plot of the combined gradation on a 0.45 power gradation curve.
- Graphical plots of air voids, voids in the mineral aggregate (VMA), and unit weight versus asphalt content. To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.
- Tensile Strength Ratio (TSR).
- Type and amount of Anti-strip agent when used.
- Asphalt Pavement Analyzer (APA) results.
- Date the JMF was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.

Table 1. Asphalt Design Criteria

Test Property	Value	Test Method
Number of blows or gyrations	75	
Air voids (%)	3.5	ASTM D3203
Percent voids in mineral aggregate (VMA), minimum	See Table 2	ASTM D6995
Tensile Strength Ratio (TSR) ¹	not less than 85 at a saturation of 70-80%	ASTM D4867
[Asphalt Pavement Analyzer (APA) ^{2,3}	Less than 10 mm @ 4000 passes	AASHTO T340 at 250 psi hose pressure at 64°C test temperature

¹ Test specimens for TSR shall be compacted at 7 ± 1.0 % air voids. In areas subject to freeze-thaw, use freeze-thaw conditioning in lieu of moisture conditioning per ASTM D4867.

² AASHTO T340 at 100 psi hose pressure at 64°C test temperature may be used in the interim. If this method is used the required Value shall be less than 5 mm @ 8000 passes

³ Where APA not available, use Hamburg Wheel test (AASHTO T-324) 10mm @ 20,000 passes at 50°C.

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 2 when tested in accordance with ASTM C136 and ASTM C117.

The gradations in Table 2 represent the limits that shall determine the suitability of aggregate for use from the sources of supply; be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa.

Table 2. Aggregate - Asphalt Pavements

Sieve Size	Percentage by Weight Passing Sieve
1 inch (25.0 mm)	100
3/4 inch (19.0 mm)	90-100
1/2 inch (12.5 mm)	68-88
3/8 inch (9.5 mm)	60-82
No. 4 (4.75 mm)	45-67
No. 8 (2.36 mm)	32-54
No. 16 (1.18 mm)	22-44
No. 30 (600 µm)	15-35
No. 50 (300 µm)	9-25
No. 100 (150 µm)	6-18
No. 200 (75 µm)	3-6
Minimum Voids in Mineral Aggregate (VMA)¹	14.0
Asphalt Percent:	
Stone or gravel	4.5-7.0
Slag	5.0-7.5
Recommended Minimum Construction Lift Thickness	3 inch

¹To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

401-3.4 Reclaimed asphalt pavement (RAP). RAP shall not be used.

401-3.5 Control Strip. A control strip is not required.

CONSTRUCTION METHODS

401-4.1 Weather limitations. The asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the RPR, if requested; however, all other requirements including compaction shall be met.

Table 4. Surface Temperature Limitations of Underlying Course

Mat Thickness	Base Temperature (Minimum)	
	°F	°C
3 inches (7.5 cm) or greater	40 ¹	4
Greater than 2 inches (50 mm) but less than 3 inches (7.5 cm)	45	7

401-4.2 Asphalt plant. Plants used for the preparation of asphalt shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 including the following items.

- a. **Inspection of plant.** The RPR, or RPR's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.
- b. **Storage bins and surge bins.** The asphalt mixture stored in storage and/or surge bins shall meet the same requirements as asphalt mixture loaded directly into trucks. Asphalt mixture shall not be stored in storage and/or surge bins for a period greater than twelve (12) hours. If the RPR determines there is an excessive heat loss, segregation, or oxidation of the asphalt mixture due to temporary storage, temporary storage shall not be allowed.

401-4.3 Aggregate stockpile management. Aggregate stockpiles shall be constructed in a manner that prevents segregation and intermixing of deleterious materials. Aggregates from different sources shall be stockpiled, weighed and batched separately at the asphalt batch plant. Aggregates that have become segregated or mixed with earth or foreign material shall not be used.

A continuous supply of materials shall be provided to the work to ensure continuous placement.

401-4.4 Hauling equipment. Trucks used for hauling asphalt shall have tight, clean, and smooth metal beds. To prevent the asphalt from sticking to the truck beds, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other material approved by the RPR. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

401-4.4.1 Material transfer vehicle (MTV). Material transfer vehicles used to transfer the material from the hauling equipment to the paver, shall use a self-propelled, material transfer vehicle with a swing conveyor that can deliver material to the paver without making contact with the paver. The MTV shall be able to move back and forth between the hauling equipment and the paver providing material transfer to the paver, while allowing the paver to operate at a constant speed. The Material Transfer Vehicle will have remixing and storage capability to prevent physical and thermal segregation.

401-4.5 Asphalt pavers. Asphalt pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of asphalt that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface. The asphalt paver shall be equipped with a control system capable of automatically maintaining the specified screed grade and elevation.

If the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued.

The paver shall be capable of paving to a minimum width specified in paragraph 401-4.12.

401-4.6 Rollers. The number, type, and weight of rollers shall be sufficient to compact the asphalt to the required density while it is still in a workable condition without crushing of the aggregate, depressions or other damage to the pavement surface. Rollers shall be in good condition, clean, and capable of operating at slow speeds to avoid displacement of the asphalt. All rollers shall be specifically designed and suitable for compacting asphalt concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used.

401-4.7 Density device. The Contractor shall have on site a density gauge during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall supply a qualified technician during all paving operations to calibrate the gauge and obtain accurate density readings for all new asphalt. These densities shall be supplied to the RPR upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

401-4.8 Preparation of asphalt binder. The asphalt binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the asphalt binder to the mixer at a uniform temperature. The temperature of unmodified asphalt binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325°F (160°C) when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F (175°C) when added to the aggregate.

401-4.9 Preparation of mineral aggregate. The aggregate for the asphalt shall be heated and dried. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350°F (175°C) when the asphalt binder is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

401-4.10 Preparation of Asphalt mixture. The aggregates and the asphalt binder shall be weighed or metered and mixed in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95% of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all asphalt upon discharge shall not exceed 0.5%.

401-4.11 Application of Prime and Tack Coat. Immediately before placing the asphalt mixture, the underlying course shall be cleaned of all dust and debris.

A prime coat in accordance with Item P-602 shall be applied to aggregate base prior to placing the asphalt mixture. A tack coat shall be applied in accordance with Item P-603 to all vertical and horizontal asphalt and concrete surfaces prior to placement of the first and each subsequent lift of asphalt mixture.

401-4.12 Laydown plan, transporting, placing, and finishing. Prior to the placement of the asphalt, the Contractor shall prepare a laydown plan with the sequence of paving lanes and width to minimize the number of cold joints; the location of any temporary ramps; laydown temperature; and estimated time of completion for each portion of the work (milling, paving, rolling, cooling, etc.). The laydown plan and any modifications shall be approved by the RPR.

Deliveries shall be scheduled so that placing and compacting of asphalt is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to approximately ambient temperature. The Contractor, at their expense, shall be responsible for repair of any damage to the pavement caused by hauling operations.

Contractor shall survey each lift of asphalt surface course and certify to RPR that every lot of each lift meets the grade tolerances of paragraph 401-6.2d before the next lift can be placed.

Edges of existing asphalt pavement abutting the new work shall be saw cut and the cut off material and laitance removed. Apply a tack coat in accordance with P-603 before new asphalt material is placed against it.

The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Placement of the asphalt mix shall begin along the centerline of a crowned section or on the high side of areas with a one way slope unless shown otherwise on the laydown plan as accepted by the RPR. The asphalt mix shall be placed in consecutive adjacent lanes to minimize longitudinal joints except where edge lanes require less width to complete the area. Additional screed sections attached to widen the paver to meet the minimum lane width requirements must include additional auger sections to move the asphalt mixture uniformly along the screed extension.

The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least one foot (30 cm); however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the asphalt may be spread and luted by hand tools.

The RPR may at any time, reject any batch of asphalt, on the truck or placed in the mat, which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or overheated asphalt mixture. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the RPR, and if it can be demonstrated in the laboratory, in the presence of the RPR, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

Areas of segregation in the surface course, as determined by the RPR, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of the construction lift thickness as specified in paragraph 401-3.3, Table 2 for the approved mix design. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet long.

401-4.13 Compaction of asphalt mixture. After placing, the asphalt mixture shall be thoroughly and uniformly compacted by self-propelled rollers. The surface shall be compacted as soon as possible when the asphalt has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any surface defects and/or displacement occurring as a result of the roller, or from any other cause, shall be corrected at the Contractor's expense.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained. To prevent adhesion of the asphalt to the roller, the wheels shall be equipped with a scraper and kept moistened with water as necessary.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power tampers. Any asphalt that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

401-4.14 Joints. The formation of all joints shall be made to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid asphalt except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be coated with an asphalt tack coat before placing any fresh asphalt against the joint.

Longitudinal joints which have been left exposed for more than four (4) hours; the surface temperature has cooled to less than 175°F; or are irregular, damaged, uncompacted or otherwise defective shall be cut back with a cutting wheel or pavement saw a maximum of 3 inches to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material and any laitance produced from cutting joints shall be removed from the project. Asphalt tack coat in accordance with P-603 shall be applied to the clean, dry joint prior to placing any additional fresh asphalt against the joint. The cost of this work shall be considered incidental to the cost of the asphalt.

401-4.15 Saw-cut grooving. Saw-cut grooving is not required.

401-4.16 Diamond grinding. Not used

401-4.17 Nighttime paving requirements. The Contractor shall provide adequate lighting during any nighttime construction. A lighting plan shall be submitted by the Contractor and approved by the RPR prior to the start of any nighttime work. All work shall be in accordance with the approved CSPP and lighting plan.

QUALITY CONTROL (QC)

401-5.1 General. A CQCP is not required.

401-5.2 Contractor quality control (QC) facilities. The Contractor shall provide or contract for testing facilities in accordance with Item C-100. The RPR shall be permitted unrestricted access to inspect the Contractor's QC facilities and witness QC activities. The RPR will advise the Contractor in writing of any noted deficiencies concerning the QC facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

401-5.3 Contractor QC testing. The Contractor shall perform all QC tests necessary to control the production and construction processes applicable to these specifications. The testing program shall include, but not necessarily be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness.

- a. **Asphalt content.** A minimum of two tests shall be performed per day in accordance with ASTM D6307 or ASTM D2172 for determination of asphalt content. When using ASTM D6307, the correction factor shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter. The asphalt content for the day will be determined by averaging the test results.
- b. **Gradation.** Aggregate gradations shall be determined a minimum of twice per day from mechanical analysis of extracted aggregate in accordance with ASTM D5444, ASTM C136, and ASTM C117.
- c. **Moisture content of aggregate.** The moisture content of aggregate used for production shall be determined a minimum of once per day in accordance with ASTM C566.
- d. **Moisture content of asphalt.** The moisture content shall be determined once per day in accordance with AASHTO T329 or ASTM D1461.
- e. **Temperatures.** Temperatures shall be checked at least four times per day, at necessary locations to determine the temperatures of the dryer, the asphalt binder in the storage tank, the asphalt at the plant, and the asphalt at the job site.
- f. **In-place density monitoring.** The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D2950.
- g. **Smoothness for Contractor Quality Control.**

The Contractor shall perform smoothness testing in transverse and longitudinal directions daily to verify that the construction processes are producing pavement with variances less than ¼ inch in 12 feet, identifying areas that may pond water which could lead to hydroplaning of aircraft. If the smoothness criteria is not met, appropriate changes and corrections to the construction process shall be made by the Contractor before construction continues.

The Contractor may use a 12-foot "straightedge, a rolling inclinometer meeting the requirements of ASTM E2133 or rolling external reference device that can simulate a 12-foot straightedge approved by the RPR. Straight-edge testing shall start with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. Testing shall be continuous across all joints. The surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length and measuring the maximum gap between the straightedge and the pavement surface in the area between the two high points. If the rolling inclinometer or external reference device is used, the data may be evaluated using either the FAA profile program, ProFAA, or FHWA ProVal, using the 12-foot straightedge simulation function.

Smoothness readings shall not be made across grade changes or cross slope transitions. The transition between new and existing pavement shall be evaluated separately for conformance with the plans.

The transition between new and existing pavement shall be constructed with careful attention to smoothness, grade alignment, and surface texture to ensure a seamless and durable connection. The Contractor is responsible for implementing quality control measures that guarantee a smooth ride and proper drainage across the transition zone. The elevation difference at the interface shall not exceed 1/8 inch over 10 feet when measured with a straightedge, and any grade deviation shall not exceed $\pm 0.1\%$ from the design profile. The Contractor shall use appropriate equipment and techniques, such as milling, tapering, or feathering, to ensure a gradual and consistent transition. All work in the transition area must be inspected and approved by the Engineer prior to final acceptance, and any deficiencies identified shall be corrected at the Contractor's expense to meet specified tolerances.

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

(1) Transverse measurements. Transverse measurements shall be taken for each day's production placed. Transverse measurements shall be taken perpendicular to the pavement centerline each 50 feet or more often as determined by the RPR. The joint between lanes shall be tested separately to facilitate smoothness between lanes.

(2) Longitudinal measurements. Longitudinal measurements shall be taken for each day's production placed. Longitudinal tests shall be parallel to the centerline of paving; at the center of paving lanes when widths of paving lanes are less than 20 feet; and at the third points of paving lanes when widths of paving lanes are 20 ft or greater. When placement abuts previously placed material the first measurement shall start with one half the length of the straight edge on the previously placed material.

Deviations on the final surface course in either the transverse or longitudinal direction that will trap water greater than 1/4 inch shall be corrected with diamond grinding per paragraph 401-4.16 or by removing and replacing the surface course to full depth. Grinding shall be tapered in all directions to provide smooth transitions to areas not requiring grinding. All areas in which diamond grinding has been performed shall be subject to the final pavement thickness tolerances specified in paragraph 401-6.1d(3). Areas that have been ground shall be sealed with a surface treatment in accordance with Item P-608. To avoid the surface treatment creating any conflict with runway or taxiway markings, it may be necessary to seal a larger area.

Control charts shall be kept to show area of each day's placement and the percentage of corrective grinding required. Corrections to production and placement shall be initiated when corrective grinding is required. If the Contractor's machines and/or methods produce significant areas that need corrective actions in excess of 10 percent of a day's production, production shall be stopped until corrective measures are implemented by the Contractor.

- h. Grade.** Grades shall be evaluated daily to allow adjustments to paving operations when grade measurements do not meet specifications. As a minimum, grades shall be evaluated prior to and after the placement of the first lift and after placement of the surface lift.

Measurements will be taken at appropriate grade lines (as a minimum at center and edges of paving lane) and longitudinal spacing as shown on cross-sections and plans. The final surface of the pavement will not vary from the grade line elevations and cross-sections shown on the plans by more than 1/2 inch vertically and 0.1 feet laterally. The documentation will be provided by the Contractor to the RPR by the end of the following working day.

Areas with humps or depressions that exceed grade or smoothness criteria and that retain water on the surface must be ground off provided the course thickness after grinding is not more than 1/2 inch less than the thickness specified on the plans. Grinding shall be in accordance with paragraph 401-4.16.

The Contractor shall repair low areas or areas that cannot be corrected by grinding by removal of deficient areas to the depth of the final course plus 1/2 inch and replacing with new material. Skin patching is not allowed.

401-5.4 Sampling. When directed by the RPR, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

401-5.5 Control charts. The Contractor shall maintain linear control charts for both individual measurements and range (i.e. difference between highest and lowest measurements) for aggregate gradation, asphalt content, and VMA. The VMA for each day will be calculated and monitored by the QC laboratory.

Control charts shall be posted in a location satisfactory to the RPR and kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and

Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the RPR may suspend production or acceptance of the material.

- a. **Individual measurements.** Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation, asphalt content, and VMA. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control Chart Limits for Individual Measurements

Sieve	Action Limit	Suspension Limit
3/4 inch (19.0 mm)	±6%	±9%
1/2 inch (12.5 mm)	±6%	±9%
3/8 inch (9.5 mm)	±6%	±9%
No. 4 (4.75 mm)	±6%	±9%
No. 16 (1.18 mm)	±5%	±7.5%
No. 50 (300 µm)	±3%	±4.5%
No. 200 (75 µm)	±2%	±3%
Asphalt Content	±0.45%	±0.70%
Minimum VMA	-0.5%	-1.0%

- b. **Range.** Control charts shall be established to control gradation process variability. The range shall be plotted as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of $n = 2$. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for $n = 3$ and by 1.27 for $n = 4$.

Control Chart Limits Based on Range

Sieve	Suspension Limit
1/2 inch (12.5 mm)	11%
3/8 inch (9.5 mm)	11%
No. 4 (4.75 mm)	11%
No. 16 (1.18 mm)	9%
No. 50 (300 µm)	6%
No. 200 (75 µm)	3.5%
Asphalt Content	0.8%

- c. **Corrective Action.** Not Included.
d. **401-5.6 QC reports.** The Contractor shall maintain records and shall submit reports of QC activities daily.

MATERIAL ACCEPTANCE

401-6.1 Acceptance sampling and testing. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the RPR at no cost to the Contractor except that coring as required in this section shall be completed and paid for by the Contractor.

- a. **Quality assurance (QA) testing laboratory.** The QA testing laboratory performing these acceptance tests will be accredited in accordance with ASTM D3666. The QA laboratory accreditation will be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing will be listed on the lab accreditation.
- b. **Lot size.** A standard lot will be equal to one day's production divided into approximately equal sublots of between 400 to 600 tons. When only one or two sublots are produced in a day's production, the sublots will be combined with the production lot from the previous or next day.

Where more than one plant is simultaneously producing asphalt for the job, the lot sizes will apply separately for each plant.

- c. **Asphalt air voids.** Plant-produced asphalt will be tested for air voids on a subplot basis.
 - 1) **Sampling.** Material from each subplot shall be sampled in accordance with ASTM D3665. Samples shall be taken from material deposited into trucks at the plant or at the job site in accordance with ASTM D979. The sample of asphalt may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes to maintain the material at or above the compaction temperature as specified in the JMF.
 - 2) **Testing.** Air voids will be determined for each subplot in accordance with ASTM D3203 for a set of three compacted specimens prepared in accordance with ASTM D6925.
- d. **In-place asphalt mat and joint density.** Each subplot will be tested for in-place mat and joint density as a percentage of the theoretical maximum density (TMD).
 - 1) **Sampling.** The Contractor will cut minimum 5 inch diameter samples in accordance with ASTM D5361. The Contractor shall furnish all tools, labor, and materials for cleaning, and filling the cored pavement. Laitance produced by the coring operation shall be removed immediately after coring, and core holes shall be filled within one day after sampling in a manner acceptable to the RPR.
 - 2) **Bond.** Each lift of asphalt shall be bonded to the underlying layer. If cores reveal that the surface is not bonded, additional cores shall be taken as directed by the RPR to determine the extent of unbonded areas. Unbonded areas shall be removed by milling and replaced at no additional cost as directed by the RPR.
 - 3) **Thickness.** Thickness of each lift of surface course will be evaluated by the RPR for compliance to the requirements shown on the plans after any necessary corrections for grade. Measurements of thickness will be made using the cores extracted for each subplot for density measurement. The maximum allowable deficiency at any point will not be more than 1/4 inch less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, will not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or subplot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the RPR to circumscribe the deficient area.
 - 4) **Mat density.** One core shall be taken from each subplot. Core locations will be determined by the RPR in accordance with ASTM D3665. Cores for mat density shall not be taken closer than one foot from a transverse or longitudinal joint. The bulk specific gravity of each cored sample will be determined in accordance with

ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each subplot sample by the TMD for that subplot.

- 5) **Joint density.** One core centered over the longitudinal joint shall be taken for each subplot that has a longitudinal joint. Core locations will be determined by the RPR in accordance with ASTM D3665. The bulk specific gravity of each core sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each joint density sample by the average TMD for the lot. The TMD used to determine the joint density at joints formed between lots will be the lower of the average TMD values from the adjacent lots.

401-6.2 Acceptance criteria.

- a. **General.** Acceptance will be based on the implementation of the Contractor Quality Control Program (CQCP) and the following characteristics of the asphalt and completed pavements: air voids, mat density, joint density, grade
- b. **Air Voids and Mat density.** Acceptance of each lot of plant produced material for mat density and air voids will be based on the percentage of material within specification limits (PWL). If the PWL of the lot equals or exceeds 90%, the lot will be acceptable. Acceptance and payment will be determined in accordance with paragraph 401-8.1.
- c. **Joint density.** Acceptance of each lot of plant produced asphalt for joint density will be based on the PWL. If the PWL of the lot is equal to or exceeds 90%, the lot will be considered acceptable. If the PWL is less than 90%, the Contractor shall evaluate the reason and act accordingly. If the PWL is less than 80%, the Contractor shall cease operations and until the reason for poor compaction has been determined. If the PWL is less than 71%, the pay factor for the lot used to complete the joint will be reduced by five (5) percentage points. This lot pay factor reduction will be incorporated and evaluated in accordance with paragraph 401-8.1.
- d. **Grade.** The final finished surface of the pavement shall be surveyed to verify that the grade elevations and cross-sections shown on the plans do not deviate more than 1/2 inch vertically or 0.1 feet laterally

Cross sections of the pavement shall be taken at a minimum 50-foot longitudinal spacing, at all longitudinal grade breaks, and at start and end of each lane placed. Minimum cross-section grade points shall include grade at centerline, $\pm$ 10 feet of centerline, and edge of taxiway pavement.

The survey and documentation shall be stamped and signed by a licensed surveyor. Payment for sublots that do not meet grade for over 25% of the subplot shall not be more than 95%.

401-6.3 Percentage of material within specification limits (PWL). The PWL will be determined in accordance with procedures specified in Item C-110. The specification tolerance limits (L) for lower and (U) for upper are contained in Table 5.

Table 5. Acceptance Limits for Air Voids and Density

Test Property	Pavements Specification Tolerance Limits	
	L	U
Air Voids Total Mix (%)	2.0	5.0
Surface Course Mat Density (%)	92.8	-
Base Course Mat Density (%)	92.0	-
Joint density (%)	90.5	--

a. Outliers. All individual tests for mat density and air voids will be checked for outliers (test criterion) in accordance with ASTM E178, at a significance level of 5%. Outliers will be discarded, and the PWL will be determined using the remaining test values. The criteria in Table 5 is based on production processes which have a variability with the following standard deviations: Surface Course Mat Density (%), 1.30; Base Course Mat Density (%), 1.55; Joint Density (%), 1.55.

The Contractor should note that (1) 90 PWL is achieved when consistently producing a surface course with an average mat density of at least 94.5% with 1.30% or less variability, (2) 90 PWL is achieved when consistently producing a base course with an average mat density of at least 94.0% with 1.55% or less variability, and (3) 90 PWL is achieved when consistently producing joints with an average joint density of at least 92.5% with 1.55% or less variability.

401-6.4 Resampling pavement for mat density.

a. General. Resampling of a lot of pavement will only be allowed for mat density, and then, only if the Contractor requests same, in writing, within 48 hours after receiving the written test results from the RPR. A retest will consist of all the sampling and testing procedures contained in paragraphs 401-6.1d and 401-6.2b. Only one resampling per lot will be permitted.

(1) A redefined PWL will be calculated for the resampled lot. The number of tests used to calculate the redefined PWL will include the initial tests made for that lot plus the retests.

(2) The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for resampled lots. The redefined PWL for a resampled lot will be used to calculate the payment for that lot in accordance with Table 6.

c. Outliers. Check for outliers in accordance with ASTM E178, at a significance level of 5%.

401-6.5 Leveling course. Not Used.

METHOD OF MEASUREMENT

401-7.1 Measurement. Asphalt shall be measured by the number of tons of asphalt used in the accepted work. Batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

401-8.1 Payment. Payment for a lot of asphalt meeting all acceptance criteria as specified in paragraph 401-6.2 shall be made based on results of tests for mat density and air voids. Payment for acceptable lots shall be adjusted according to paragraph 401-8.1c for mat density and air voids; and paragraph 401-6.2c for joint density, subject to the limitation that:

- a. The total project payment for plant mix asphalt pavement shall not exceed **100** percent of the product of the contract unit price and the total number of tons of asphalt used in the accepted work.
- b. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.
- c. **Basis of adjusted payment.** The pay factor for each individual lot shall be calculated in accordance with Table 6. A pay factor shall be calculated for both mat density and air voids. The lot pay factor shall be the higher of the two values when calculations for both mat density and air voids are 100% or higher. The lot pay factor shall be the product of the two values when only one of the calculations for either mat density or air voids is 100% or higher. The lot pay factor shall be the lower of the two values when calculations for both mat density and air voids are less than 100%. If PWL for joint density is less than 71% then the lot pay factor shall be reduced by 5% but be no higher than 95%.

For each lot accepted, the adjusted contract unit price shall be the product of the lot pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment limitation specified in paragraph 401-8.1a. Payment in excess of 100% for accepted lots of asphalt shall be used to offset payment for accepted lots of asphalt pavement that achieve a lot pay factor less than 100%.

Payment for sublots which do not meet grade in accordance with paragraph 401-6.2d after correction for over 25% of the sublot shall be reduced by 5%.

Table 6. Price adjustment schedule¹

Percentage of material within specification limits (PWL)	Lot pay factor (percent of contract unit price)
96 – 100	106
90 – 95	PWL + 10
75 – 89	0.5 PWL + 55
55 – 74	1.4 PWL – 12
Below 55	Reject ²

¹ Although it is theoretically possible to achieve a pay factor of 106% for each lot, actual payment above 100% shall be subject to the total project payment limitation specified in paragraph 401-8.1a.

² The lot shall be removed and replaced. However, the RPR may decide to allow the rejected lot to remain. In that case, if the RPR and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50% of the contract unit price and the total project payment shall be reduced by the amount withheld for the rejected lot.

d. Profilograph Roughness. Not Used.

401-8.1 Payment.

Payment will be made under:

Item P-401-8.1 Asphalt Binder Course - per ton

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29	Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine

ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
ASTM D946	Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D979	Standard Practice for Sampling Asphalt Paving Mixtures
ASTM D1073	Standard Specification for Fine Aggregate for Asphalt Paving Mixtures
ASTM D1188	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
ASTM D2172	Standard Test Method for Quantitative Extraction of Bitumen from Asphalt Paving Mixtures
ASTM D1461	Standard Test Method for Moisture or Volatile Distillates in Asphalt Paving Mixtures
ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3381	Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4552	Standard Practice for Classifying Hot-Mix Recycling Agents
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures

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ASTM D5361	Standard Practice for Sampling Compacted Asphalt Mixtures for Laboratory Testing
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6084	Standard Test Method for Elastic Recovery of Bituminous Materials by Ductilometer
ASTM D6307	Standard Test Method for Asphalt Content of Hot Mix Asphalt by Ignition Method
ASTM D6373	Standard Specification for Performance Graded Asphalt Binder
ASTM D6752	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method
ASTM D6925	Standard Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the SuperPave Gyratory Compactor.
ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
ASTM D6995	Standard Test Method for Determining Field VMA based on the Maximum Specific Gravity of the Mix (Gmm)
ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E178	Standard Practice for Dealing with Outlying Observations
ASTM E1274	Standard Test Method for Measuring Pavement Roughness Using a Profilograph
ASTM E950	Standard Test Method for Measuring the Longitudinal Profile of Traveled Surfaces with an Accelerometer Established Inertial Profiling Reference
ASTM E2133	Standard Test Method for Using a Rolling Inclinator to Measure Longitudinal and Transverse Profiles of a Traveled Surface

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO M156	Standard Specification for Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
AASHTO T329	Standard Method of Test for Moisture Content of Hot Mix Asphalt (HMA) by Oven Method
AASHTO T324	Standard Method of Test for Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures
AASHTO T 340	Standard Method of Test for Determining the Rutting Susceptibility of Hot Mix Asphalt (APA) Using the Asphalt Pavement Analyzer (APA)

Asphalt Institute (AI)

Asphalt Institute Handbook MS-26,	Asphalt Binder
Asphalt Institute MS-2	Mix Design Manual, 7th Edition

BHM – Taxiway Alpha Emergency Patching
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AI State Binder Specification Database

Federal Highway Administration (FHWA)

Long Term Pavement Performance Binder Program

Advisory Circulars (AC)

AC 150/5320-6 Airport Pavement Design and Evaluation

FAA Orders

5300.1 Modifications to Agency Airport Design, Construction, and Equipment Standards

Software

FAARFIELD

END OF ITEM P-401

ITEM P403 Asphalt Mix Pavement - Surface Course

DESCRIPTION

403-1.1 This item shall consist of pavement courses composed of mineral aggregate and asphalt binder mixed in a central mixing plant and placed on a prepared course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

403-2.1 Aggregate. Aggregates shall consist of crushed stone, crushed gravel, crushed slag, screenings, natural sand and mineral filler, as required. The aggregates should have no known history of detrimental pavement staining due to ferrous sulfides, such as pyrite. Coarse aggregate is the material retained on the No. 4 (4.75 mm) sieve. Fine aggregate is the material passing the No. 4 (4.75 mm) sieve.

- a. **Coarse aggregate.** Coarse aggregate shall consist of sound, tough, durable particles, free from films of matter that would prevent thorough coating and bonding with the asphalt material and free from organic matter and other deleterious substances. Coarse aggregate material requirements are given in the table below.

Coarse aggregate Material requirements

Material Test	Requirement	Standard
Resistance to Degradation	Loss: 40% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0 % maximum	ASTM C142
Percentage of Fractured Particles	For pavements designed for aircraft gross weights of 60,000 pounds (27200 kg) or more: Minimum 75% by weight of particles with at least two fractured faces and 85% with at least one fractured face ¹	ASTM D5821
	For pavements designed for aircraft gross weights less than 60,000 pounds (27200 kg): Minimum 50% by weight of particles with at least two fractured faces and 65% with at least one fractured face ¹	
Flat, Elongated, or Flat and Elongated Particles	8% maximum, by weight, of flat, elongated, or flat and elongated particles at 5:1 ²	ASTM D4791
Bulk density of slag ³	Weigh not less than 70 pounds per cubic foot (1.12 Mg/cubic meter)	ASTM C29.

¹ The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

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² A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

³ Only required if slag is specified.

- b. Fine aggregate.** Fine aggregate shall consist of clean, sound, tough, durable, angular shaped particles produced by crushing stone, slag, or gravel and shall be free from coatings of clay, silt, or other objectionable matter. Natural (non-manufactured) sand may be used to obtain the gradation of the fine aggregate blend or to improve the workability of the mix. Fine aggregate material requirements are listed in the table below.

Fine Aggregate Material requirements

Material Test	Requirement	Standard
Liquid limit	25 maximum	ASTM D4318
Plasticity Index	4 maximum	ASTM D4318
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 10% maximum using Sodium sulfate - or - 15% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0% maximum	ASTM C142
Sand equivalent	45 minimum	ASTM D2419
Natural Sand	0% to 15% maximum weight of total aggregate	ASTM D1073

- c. Sampling.** ASTM D75 shall be used in sampling course and fine aggregate, and ASTM C183 shall be used in sampling mineral filler.

403-2.2 Mineral filler. Mineral filler (baghouse fines) may be added in addition to material naturally present in the aggregate. Mineral filler shall meet the requirements of ASTM D242.

Mineral Filler Requirements

Material Test	Requirement	Standard
Plasticity Index	4 maximum	ASTM D4318

403-2.3 Asphalt binder. Asphalt binder shall conform to **ASTM D6373** and be of **Performance Grade (PG) 64-22** suitable for the climatic conditions of Birmingham, Alabama, as per FAA guidelines. **PG 70-22 shall be used if recommended by the FAA**, and such a recommendation shall **supersede the Engineer's selection** of PG 64-22.

Asphalt Binder PG Plus Test Requirements

Material Test	Requirement	Standard
Elastic Recovery	75% minimum	ASTM D6084 ¹

¹ Follow procedure B on RTFO aged binder.

403-2.4 Anti-stripping agent. Any anti-stripping agent or additive (anti-strip) shall be heat stable and shall not change the asphalt binder grade beyond specifications. Anti-strip shall be an approved material of the Department of Transportation of the State in which the project is located.

403-2.5 Bond Breaker. Not used.

COMPOSITION

403-3.1 Composition of mixture. The asphalt mix shall be composed of a mixture of well-graded aggregates, filler and anti-strip agent if required, and asphalt binder. The aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

403-3.2 Job mix formula (JMF) laboratory. The laboratory used to develop the JMF shall possess a current certificate of accreditation, listing D3666 from a national accrediting authority and all test methods required for developing the JMF; and be listed on the accrediting authority's website. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Resident Project Representative (RPR) prior to start of construction.

403-3.3 Job mix formula (JMF). No asphalt mixture shall be placed until an acceptable mix design has been submitted to the RPR for review and accepted in writing. The RPR's review shall not relieve the Contractor of the responsibility to select and proportion the materials to comply with this section.

When the project requires asphalt mixtures of differing aggregate gradations and/or binders, a separate JMF shall be submitted for each mix. Add anti-stripping agent to meet tensile strength requirements.

The JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 401-3.2. The asphalt mixture shall be designed using procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. Samples shall be prepared and compacted using the gyratory compactor in accordance with ASTM D6925.

Should a change in sources of materials be made, a new JMF must be submitted to the RPR for review and accepted in writing before the new material is used. After the initial production JMF has been approved by the RPR and a new or modified JMF is required for whatever reason, the subsequent cost of the new or modified JMF, including a new control strip when required by the RPR, will be borne by the Contractor.

The RPR may request samples at any time for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

The JMF shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations. The JMF shall be developed within the same construction season using aggregates proposed for project use.

The JMF shall be dated, and stamped or sealed by the responsible professional Engineer of the laboratory and shall include the following items as a minimum:

- Manufacturer's Certificate of Analysis (COA) for the asphalt binder used in the JMF in accordance with paragraph 401-2.3. Certificate of asphalt performance grade is with modifier already added, if used and must indicate compliance with ASTM D6373. For plant modified asphalt binder, certified test report indicating grade certification of modified asphalt binder.
- Manufacturer's Certificate of Analysis (COA) for the anti-stripping agent if used in the JMF in accordance with paragraph 401-2.4.
- Certified material test reports for the COURSE and fine aggregate and mineral filler in accordance with paragraphs 401-2.1.
- Percent passing each sieve size for individual gradation of each aggregate cold feed and/or hot bin; percent by weight of each cold feed and/or hot bin used; and the total combined gradation in the JMF.

- Specific Gravity and absorption of each course and fine aggregate.
- Percent natural sand.
- Percent fractured faces.
- Percent by weight of flat particles, elongated particles, and flat and elongated particles (and criteria).
- Percent of asphalt.
- Number of blows or gyrations
- Laboratory mixing and compaction temperatures.
- Supplier-recommended field mixing and compaction temperatures.
- Plot of the combined gradation on a 0.45 power gradation curve.
- Graphical plots of air voids, voids in the mineral aggregate (VMA), and unit weight versus asphalt content.
To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.
- Tensile Strength Ratio (TSR).
- Type and amount of Anti-strip agent when used.
- Asphalt Pavement Analyzer (APA) results.
- Date the JMF was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.

Table 1. Asphalt Design Criteria

Test Property	Value	Test Method
Number of blows or gyrations	75	
Air voids (%)	3.5	ASTM D3203
Percent voids in mineral aggregate (VMA), minimum	See Table 2	ASTM D6995
Tensile Strength Ratio (TSR) ¹	not less than 85 at a saturation of 70-80%	ASTM D4867
[Asphalt Pavement Analyzer (APA) ^{2,3}]	Less than 10 mm @ 4000 passes	AASHTO T340 at 250 psi hose pressure at 64°C test temperature

¹ Test specimens for TSR shall be compacted at 7 ± 1.0 % air voids. In areas subject to freeze-thaw, use freeze-thaw conditioning in lieu of moisture conditioning per ASTM D4867.

² AASHTO T340 at 100 psi hose pressure at 64°C test temperature may be used in the interim. If this method is used the required Value shall be less than 5 mm @ 8000 passes

³ Where APA not available, use Hamburg Wheel test (AASHTO T-324) 10mm @ 20,000 passes at 50°C.

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 2 when tested in accordance with ASTM C136 and ASTM C117.

The gradations in Table 2 represent the limits that shall determine the suitability of aggregate for use from the sources of supply; be well graded from course to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa.

Table 2. Aggregate - Asphalt Pavements

Sieve Size	Percentage by Weight Passing Sieve
1 inch (25.0 mm)	100
3/4 inch (19.0 mm)	90-100
1/2 inch (12.5 mm)	68-88
3/8 inch (9.5 mm)	60-82
No. 4 (4.75 mm)	45-67
No. 8 (2.36 mm)	32-54
No. 16 (1.18 mm)	22-44
No. 30 (600 µm)	15-35
No. 50 (300 µm)	9-25
No. 100 (150 µm)	6-18
No. 200 (75 µm)	3-6
Minimum Voids in Mineral Aggregate (VMA)¹	14.0
Asphalt Percent:	
Stone or gravel	4.5-7.0
Slag	5.0-7.5
Recommended Minimum Construction Lift Thickness	3 inch

¹To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

403-3.4 Reclaimed asphalt pavement (RAP). RAP shall not be used.

403-3.5 Control Strip. A control strip is not required.

CONSTRUCTION METHODS

403-4.1 Weather limitations. The asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying COURSE is less than specified in Table 4. The temperature requirements may be waived by the RPR, if requested; however, all other requirements including compaction shall be met.

Table 4. Surface Temperature Limitations of Underlying COURSE

Mat Thickness	Base Temperature (Minimum)	
	°F	°C
3 inches (7.5 cm) or greater	40 ¹	4
Greater than 2 inches (50 mm) but less than 3 inches (7.5 cm)	45	7

403-4.2 Asphalt plant. Plants used for the preparation of asphalt shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 including the following items.

- a. **Inspection of plant.** The RPR, or RPR's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.
- b. **Storage bins and surge bins.** The asphalt mixture stored in storage and/or surge bins shall meet the same requirements as asphalt mixture loaded directly into trucks. Asphalt mixture shall not be stored in storage and/or surge bins for a period greater than twelve (12) hours. If the RPR determines there is an excessive heat loss, segregation, or oxidation of the asphalt mixture due to temporary storage, temporary storage shall not be allowed.

403-4.3 Aggregate stockpile management. Aggregate stockpiles shall be constructed in a manner that prevents segregation and intermixing of deleterious materials. Aggregates from different sources shall be stockpiled, weighed and batched separately at the asphalt batch plant. Aggregates that have become segregated or mixed with earth or foreign material shall not be used.

A continuous supply of materials shall be provided to the work to ensure continuous placement.

403-4.4 Hauling equipment. Trucks used for hauling asphalt shall have tight, clean, and smooth metal beds. To prevent the asphalt from sticking to the truck beds, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other material approved by the RPR. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

403-4.4.1 Material transfer vehicle (MTV). Material transfer vehicles used to transfer the material from the hauling equipment to the paver, shall use a self-propelled, material transfer vehicle with a swing conveyor that can deliver material to the paver without making contact with the paver. The MTV shall be able to move back and forth between the hauling equipment and the paver providing material transfer to the paver, while allowing the paver to operate at a constant speed. The Material Transfer Vehicle will have remixing and storage capability to prevent physical and thermal segregation.

403-4.5 Asphalt pavers. Asphalt pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of asphalt that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface. The asphalt paver shall be equipped with a control system capable of automatically maintaining the specified screed grade and elevation.

If the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued.

The paver shall be capable of paving to a minimum width specified in paragraph 401-4.12.

403-4.6 Rollers. The number, type, and weight of rollers shall be sufficient to compact the asphalt to the required density while it is still in a workable condition without crushing of the aggregate, depressions or other damage to the pavement surface. Rollers shall be in good condition, clean, and capable of operating at slow speeds to avoid displacement of the asphalt. All rollers shall be specifically designed and suitable for compacting asphalt concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used.

403-4.6.1 Density device. The Contractor shall have on site a density gauge during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall supply a qualified technician during all paving operations to calibrate the gauge and obtain accurate density readings for all new asphalt. These densities shall be supplied to the RPR upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

403-4.7 Preparation of asphalt binder. The asphalt binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the asphalt binder to the mixer at a uniform temperature. The temperature of unmodified asphalt binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325°F when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F when added to the aggregate.

403-4.8 Preparation of mineral aggregate. The aggregate for the asphalt shall be heated and dried. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350°F when the asphalt binder is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

403-4.9 Preparation of Asphalt mixture. The aggregates and the asphalt binder shall be weighed or metered and mixed in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95% of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all asphalt upon discharge shall not exceed 0.5%.

403-4.10 Application of Prime and Tack Coat. Immediately before placing the asphalt mixture, the underlying course shall be cleaned of all dust and debris.

A prime coat in accordance with Item P-602 shall be applied to aggregate base prior to placing the asphalt mixture. A tack coat shall be applied in accordance with Item P-603 to all vertical and horizontal asphalt and concrete surfaces prior to placement of the first and each subsequent lift of asphalt mixture.

403-4.11 Laydown plan, transporting, placing, and finishing. Prior to the placement of the asphalt, the Contractor shall prepare a laydown plan with the sequence of paving lanes and width to minimize the number of cold joints; the

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location of any temporary ramps; laydown temperature; and estimated time of completion for each portion of the work (milling, paving, rolling, cooling, etc.). The laydown plan and any modifications shall be approved by the RPR.

Deliveries shall be scheduled so that placing and compacting of asphalt is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to approximately ambient temperature. The Contractor, at their expense, shall be responsible for repair of any damage to the pavement caused by hauling operations.

Contractor shall survey each lift of asphalt surface course and certify to RPR that every lot of each lift meets the grade tolerances of paragraph 401-6.2d before the next lift can be placed.

Edges of existing asphalt pavement abutting the new work shall be saw cut and the cut off material and laitance removed. Apply a tack coat in accordance with P-603 before new asphalt material is placed against it.

The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Placement of the asphalt mix shall begin along the centerline of a crowned section or on the high side of areas with a one way slope unless shown otherwise on the laydown plan as accepted by the RPR. The asphalt mix shall be placed in consecutive adjacent lanes to minimize longitudinal joints except where edge lanes require less width to complete the area. Additional screed sections attached to widen the paver to meet the minimum lane width requirements must include additional auger sections to move the asphalt mixture uniformly along the screed extension.

The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least one foot (30 cm); however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the asphalt may be spread and luted by hand tools.

The RPR may at any time, reject any batch of asphalt, on the truck or placed in the mat, which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or overheated asphalt mixture. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the RPR, and if it can be demonstrated in the laboratory, in the presence of the RPR, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

Areas of segregation in the surface course, as determined by the RPR, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of the construction lift thickness as specified in paragraph 401-3.3, Table 2 for the approved mix design. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet long.

403-4.12 Compaction of asphalt mixture. After placing, the asphalt mixture shall be thoroughly and uniformly compacted by self-propelled rollers. The surface shall be compacted as soon as possible when the asphalt has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any surface defects and/or displacement occurring as a result of the roller, or from any other cause, shall be corrected at the Contractor's expense.

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Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained. To prevent adhesion of the asphalt to the roller, the wheels shall be equipped with a scraper and kept moistened with water as necessary.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power tampers.

Any asphalt that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

403-4.13 Joints. The formation of all joints shall be made to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid asphalt except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be coated with an asphalt tack coat before placing any fresh asphalt against the joint.

Longitudinal joints which have been left exposed for more than four (4) hours; the surface temperature has cooled to less than 175°F; or are irregular, damaged, uncompacted or otherwise defective shall be cut back with a cutting wheel or pavement saw a maximum of 3 inches to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material and any laitance produced from cutting joints shall be removed from the project. Asphalt tack coat in accordance with P-603 shall be applied to the clean, dry joint prior to placing any additional fresh asphalt against the joint. The cost of this work shall be considered incidental to the cost of the asphalt.

403-4.14 Saw-cut grooving. Saw-cut grooving is not required.

403-4.15 Diamond grinding. Not used

403-4.16 Nighttime paving requirements. The Contractor shall provide adequate lighting during any nighttime construction. A lighting plan shall be submitted by the Contractor and approved by the RPR prior to the start of any nighttime work. All work shall be in accordance with the approved CSPP and lighting plan.

QUALITY CONTROL (QC)

403-5.1 General. A CQCP is not required.

403-5.2 Contractor quality control (QC) facilities. The Contractor shall provide or contract for testing facilities in accordance with Item C-100. The RPR shall be permitted unrestricted access to inspect the Contractor's QC facilities and witness QC activities. The RPR will advise the Contractor in writing of any noted deficiencies concerning the QC facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

403-5.3 Contractor QC testing. The Contractor shall perform all QC tests necessary to control the production and construction processes applicable to these specifications. The testing program shall include, but not necessarily be

limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness.

- a. **Asphalt content.** A minimum of two tests shall be performed per day in accordance with ASTM D6307 or ASTM D2172 for determination of asphalt content. When using ASTM D6307, the correction factor shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter. The asphalt content for the day will be determined by averaging the test results.
- b. **Gradation.** Aggregate gradations shall be determined a minimum of twice per day from mechanical analysis of extracted aggregate in accordance with ASTM D5444, ASTM C136, and ASTM C117.
- c. **Moisture content of aggregate.** The moisture content of aggregate used for production shall be determined a minimum of once per day in accordance with ASTM C566.
- d. **Moisture content of asphalt.** The moisture content shall be determined once per day in accordance with AASHTO T329 or ASTM D1461.
- e. **Temperatures.** Temperatures shall be checked at least four times per day, at necessary locations to determine the temperatures of the dryer, the asphalt binder in the storage tank, the asphalt at the plant, and the asphalt at the job site.
- f. **In-place density monitoring.** The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D2950.
- g. **Smoothness for Contractor Quality Control.**

The Contractor shall perform smoothness testing in transverse and longitudinal directions daily to verify that the construction processes are producing pavement with variances less than ¼ inch in 12 feet, identifying areas that may pond water which could lead to hydroplaning of aircraft. If the smoothness criteria is not met, appropriate changes and corrections to the construction process shall be made by the Contractor before construction continues.

The Contractor may use a 12-foot "straightedge, a rolling inclinometer meeting the requirements of ASTM E2133 or rolling external reference device that can simulate a 12-foot straightedge approved by the RPR. Straight-edge testing shall start with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. Testing shall be continuous across all joints. The surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length and measuring the maximum gap between the straightedge and the pavement surface in the area between the two high points. If the rolling inclinometer or external reference device is used, the data may be evaluated using either the FAA profile program, ProFAA, or FHWA ProVal, using the 12-foot straightedge simulation function.

Smoothness readings shall not be made across grade changes or cross slope transitions. The transition between new and existing pavement shall be evaluated separately for conformance with the plans.

The transition between new and existing pavement shall be constructed with careful attention to smoothness, grade alignment, and surface texture to ensure a seamless and durable connection. The Contractor is responsible for implementing quality control measures that guarantee a smooth ride and proper drainage across the transition zone. The elevation difference at the interface shall not exceed 1/8 inch over 10 feet when measured with a straightedge, and any grade deviation shall not exceed $\pm 0.1\%$ from the design profile. The Contractor shall use appropriate equipment and techniques, such as milling, tapering, or feathering, to ensure a gradual and consistent transition. All work in the transition area must be inspected and approved by the Engineer prior to final acceptance, and any deficiencies identified shall be corrected at the Contractor's expense to meet specified tolerances.

(1) Transverse measurements. Transverse measurements shall be taken for each day's production placed. Transverse measurements shall be taken perpendicular to the pavement centerline each 50 feet or more often as determined by the RPR. The joint between lanes shall be tested separately to facilitate smoothness between lanes.

(2) Longitudinal measurements. Longitudinal measurements shall be taken for each day's production placed. Longitudinal tests shall be parallel to the centerline of paving; at the center of paving lanes when widths of paving lanes are less than 20 feet; and at the third points of paving lanes when widths of paving lanes are 20 ft or greater. When placement abuts previously placed material the first measurement shall start with one half the length of the straight edge on the previously placed material.

Deviations on the final surface course in either the transverse or longitudinal direction that will trap water greater than 1/4 inch shall be corrected with diamond grinding per paragraph 401-4.16 or by removing and replacing the surface course to full depth. Grinding shall be tapered in all directions to provide smooth transitions to areas not requiring grinding. All areas in which diamond grinding has been performed shall be subject to the final pavement thickness tolerances specified in paragraph 401-6.1d(3). Areas that have been ground shall be sealed with a surface treatment in accordance with Item P-608. To avoid the surface treatment creating any conflict with runway or taxiway markings, it may be necessary to seal a larger area.

Control charts shall be kept to show area of each day's placement and the percentage of corrective grinding required. Corrections to production and placement shall be initiated when corrective grinding is required. If the Contractor's machines and/or methods produce significant areas that need corrective actions in excess of 10 percent of a day's production, production shall be stopped until corrective measures are implemented by the Contractor.

- h. Grade.** Grades shall be evaluated daily to allow adjustments to paving operations when grade measurements do not meet specifications. As a minimum, grades shall be evaluated prior to and after the placement of the first lift and after placement of the surface lift.

Measurements will be taken at appropriate grade lines (as a minimum at center and edges of paving lane) and longitudinal spacing as shown on cross-sections and plans. The final surface of the pavement will not vary from the grade line elevations and cross-sections shown on the plans by more than 1/2 inch vertically and 0.1 feet laterally. The documentation will be provided by the Contractor to the RPR by the end of the following working day.

Areas with humps or depressions that exceed grade or smoothness criteria and that retain water on the surface must be ground off provided the course thickness after grinding is not more than 1/2 inch less than the thickness specified on the plans. Grinding shall be in accordance with paragraph 401-4.16.

The Contractor shall repair low areas or areas that cannot be corrected by grinding by removal of deficient areas to the depth of the final course plus 1/2 inch and replacing with new material. Skin patching is not allowed.

403-5.4 Sampling. When directed by the RPR, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

403-5.5 Control charts. The Contractor shall maintain linear control charts for both individual measurements and range (i.e. difference between highest and lowest measurements) for aggregate gradation, asphalt content, and VMA. The VMA for each day will be calculated and monitored by the QC laboratory.

Control charts shall be posted in a location satisfactory to the RPR and kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the

control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the RPR may suspend production or acceptance of the material.

- a. **Individual measurements.** Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation, asphalt content, and VMA. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control Chart Limits for Individual Measurements

Sieve	Action Limit	Suspension Limit
3/4 inch (19.0 mm)	±6%	±9%
1/2 inch (12.5 mm)	±6%	±9%
3/8 inch (9.5 mm)	±6%	±9%
No. 4 (4.75 mm)	±6%	±9%
No. 16 (1.18 mm)	±5%	±7.5%
No. 50 (300 µm)	±3%	±4.5%
No. 200 (75 µm)	±2%	±3%
Asphalt Content	±0.45%	±0.70%
Minimum VMA	-0.5%	-1.0%

- b. **Range.** Control charts shall be established to control gradation process variability. The range shall be plotted as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of $n = 2$. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for $n = 3$ and by 1.27 for $n = 4$.

Control Chart Limits Based on Range

Sieve	Suspension Limit
1/2 inch (12.5 mm)	11%
3/8 inch (9.5 mm)	11%
No. 4 (4.75 mm)	11%
No. 16 (1.18 mm)	9%
No. 50 (300 µm)	6%
No. 200 (75 µm)	3.5%
Asphalt Content	0.8%

- c. **Corrective Action.** Not Included.
- d. **401-5.6 QC reports.** The Contractor shall maintain records and shall submit reports of QC activities daily.

MATERIAL ACCEPTANCE

403-6.1 Acceptance sampling and testing. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the RPR at no cost to the Contractor except that coring as required in this section shall be completed and paid for by the Contractor.

- a. **Quality assurance (QA) testing laboratory.** The QA testing laboratory performing these acceptance tests will be accredited in accordance with ASTM D3666. The QA laboratory accreditation will be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing will be listed on the lab accreditation.
- b. **Lot size.** A standard lot will be equal to one day's production divided into approximately equal sublots of between 400 to 600 tons. When only one or two sublots are produced in a day's production, the sublots will be combined with the production lot from the previous or next day.

Where more than one plant is simultaneously producing asphalt for the job, the lot sizes will apply separately for each plant.

- c. **Asphalt air voids.** Plant-produced asphalt will be tested for air voids on a subplot basis.
 - 1) **Sampling.** Material from each subplot shall be sampled in accordance with ASTM D3665. Samples shall be taken from material deposited into trucks at the plant or at the job site in accordance with ASTM D979. The sample of asphalt may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes to maintain the material at or above the compaction temperature as specified in the JMF.
 - 2) **Testing.** Air voids will be determined for each subplot in accordance with ASTM D3203 for a set of three compacted specimens prepared in accordance with ASTM D6925.
- d. **In-place asphalt mat and joint density.** Each subplot will be tested for in-place mat and joint density as a percentage of the theoretical maximum density (TMD).
 - 1) **Sampling.** The Contractor will cut minimum 5 inch diameter samples in accordance with ASTM D5361. The Contractor shall furnish all tools, labor, and materials for cleaning, and filling the cored pavement. Laitance produced by the coring operation shall be removed immediately after coring, and core holes shall be filled within one day after sampling in a manner acceptable to the RPR.
 - 2) **Bond.** Each lift of asphalt shall be bonded to the underlying layer. If cores reveal that the surface is not bonded, additional cores shall be taken as directed by the RPR to determine the extent of unbonded areas. Unbonded areas shall be removed by milling and replaced at no additional cost as directed by the RPR.
 - 3) **Thickness.** Thickness of each lift of surface course will be evaluated by the RPR for compliance to the requirements shown on the plans after any necessary corrections for grade. Measurements of thickness will be made using the cores extracted for each subplot for density measurement. The maximum allowable deficiency at any point will not be more than 1/4 inch less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, will not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or subplot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the RPR to circumscribe the deficient area.
 - 4) **Mat density.** One core shall be taken from each subplot. Core locations will be determined by the RPR in accordance with ASTM D3665. Cores for mat density shall not be taken closer than one foot from a transverse or longitudinal joint. The bulk specific gravity of each cored sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each subplot sample by the TMD for that subplot.

- 5) Joint density. One core centered over the longitudinal joint shall be taken for each subplot that has a longitudinal joint. Core locations will be determined by the RPR in accordance with ASTM D3665. The bulk specific gravity of each core sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each joint density sample by the average TMD for the lot. The TMD used to determine the joint density at joints formed between lots will be the lower of the average TMD values from the adjacent lots.

403-6.2 Acceptance criteria.

- a. **General.** Acceptance will be based on the implementation of the Contractor Quality Control Program (CQCP) and the following characteristics of the asphalt and completed pavements: air voids, mat density, joint density, grade
- b. **Air Voids.** Acceptance of each lot of plant produced material for air voids will be based upon the average air void from the sublots. If the average air voids of the lot are equal to or greater than 2% and equal to or less than 5%, then the lot will be acceptable. If the average is below 2% or greater than 5%, the lot shall be removed and replaced at the Contractor's expense.
- c. **Mat density.** Acceptance of each lot of plant produced material for mat density will be based on the average of all of the densities taken from the sublots. If the average mat density of the lot so established equals or exceeds 94%, the lot will be acceptable. If the average mat density of the lot is below 94%, the lot shall be removed and replaced at the Contractor's expense.
- d. **Joint density.** Acceptance of each lot of plant produced asphalt for joint density will be based on the average of all of the joint densities taken from the sublots. If the average joint density of the lot so established equals or exceeds 92%, the lot will be acceptable. If the average joint density of the lot is less than 92%, the Contractor shall stop production and evaluate the method of compacting joints. Production may resume once the reason for poor compaction has been determined and appropriate measures have been taken to ensure proper compaction.
- e. **Grade.** The final finished surface of the pavement shall be surveyed to verify that the grade elevations and cross-sections shown on the plans do not deviate more than 1/2 inch vertically or 0.1 feet laterally

Cross sections of the pavement shall be taken at a minimum 50-foot longitudinal spacing, at all longitudinal grade breaks, and at start and end of each lane placed. Minimum cross-section grade points shall include grade at centerline, $\pm$ 10 feet of centerline, and edge of taxiway pavement.

The survey and documentation shall be stamped and signed by a licensed surveyor. Payment for sublots that do not meet grade for over 25% of the subplot shall not be more than 95%.

403-6.3 Resampling pavement for mat density.

- a. **General.** Resampling of a lot of pavement will only be allowed for mat density, and then, only if the Contractor requests same, in writing, within 48 hours after receiving the written test results from the RPR. A retest will consist of all the sampling and testing procedures contained in paragraphs 401-6.1d and 401-6.2b. Only one resampling per lot will be permitted.
 - (1) A redefined mat density will be calculated for the resampled lot. The number of tests used to calculate the redefined mat density will include the initial tests made for that lot plus the retests.
 - (2) The cost for resampling and retesting shall be borne by the Contractor.
- b. **Payment for resampled lots.** The redefined mat density for a resampled lot will be used to evaluate the acceptance of that lot in accordance with paragraph 403-6.2.
- c. **Outliers.** Check for outliers in accordance with ASTM E178, at a significance level of 5%. Outliers will be discarded and density determined using the remaining test values.

403-6.4 Leveling COURSE. Not Used.

METHOD OF MEASUREMENT

403-7.1 Measurement. Plant mix asphalt mix pavement shall be measured by the number of tons (kg) of asphalt pavement used in the accepted work. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

403-8.1 Payment. Payment for a lot of asphalt mixture meeting all acceptance criteria as specified in paragraph 403-6.2 shall be made at the contract unit price per ton (kg) for asphalt. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Payment will be made under:

Item P-403-8.1 Asphalt Mixture Binder course - per ton

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29	Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM C183	Standard Practice for Sampling and the Amount of Testing of Hydraulic Cement
ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
ASTM D946	Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction

ASTM D979	Standard Practice for Sampling Bituminous Paving Mixtures
ASTM D1073	Standard Specification for Fine Aggregate for Bituminous Paving Mixtures
ASTM D1074	Standard Test Method for Compressive Strength of Bituminous Mixtures
ASTM D1461	Standard Test Method for Moisture or Volatile Distillates in Bituminous Paving Mixtures
ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D2172	Standard Test Method for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3381	Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D4125	Standard Test Methods for Asphalt Content of Bituminous mixtures by the Nuclear Method
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4552	Standard Practice for Classifying Hot-Mix Recycling Agents
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
ASTM D5581	Standard Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus (6 inch-Diameter Specimen)
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6307	Standard Test Method for Asphalt Content of Hot-Mix Asphalt by Ignition Method
ASTM D6373	Standard Specification for Performance Graded Asphalt Binder

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

ASTM D6752	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method
ASTM D6925	Standard Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the SuperPave Gyratory Compactor
ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
ASTM D6995	Standard Test Method for Determining Field VMA based on the Maximum Specific Gravity of the Mix (Gmm)
ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E178	Standard Practice for Dealing with Outlying Observations
ASTM E2133	Standard Test Method for Using a Rolling Inclinator to Measure Longitudinal and Transverse Profiles of a Traveled Surface
American Association of State Highway and Transportation Officials (AASHTO)	
AASHTO M156	Standard Specification for Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures
AASHTO T329	Standard Method of Test for Moisture Content of Hot Mix Asphalt (HMA) by Oven Method
AASHTO T 340	Standard Method of Test for Determining the Rutting Susceptibility of Hot Mix Asphalt (APA) Using the Asphalt Pavement Analyzer (APA)
Asphalt Institute (AI)	
MS-2	Mix Design Manual, 7th Edition
MS-26	Asphalt Binder Handbook AI State Binder Specification Database
FAA Orders	
5300.1	Modifications to Agency Airport Design, Construction, and Equipment Standards
Federal Highway Administration (FHWA)	
Long Term Pavement Performance Binder program	
Software	
FAARFIELD	

END OF ITEM P-403

Item P-620 Runway and Taxiway Marking

DESCRIPTION

620-1.1 This item shall consist of the preparation and 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 Resident Project Representative (RPR). The terms “paint” and “marking material” as well as “painting” and “application of markings” are interchangeable throughout this specification.

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. This certification along with a copy of the paint manufacturer’s surface preparation; marking materials, including adhesion, flow promoting and/or floatation additive; and application requirements must be submitted and approved by the Resident Project Representative (RPR) prior to the initial application of markings. The reports can be used for material acceptance or the RPR may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the RPR upon arrival of a shipment of materials to the site. All material shall arrive in sealed containers that are easily quantifiable for inspection by the RPR.

620-2.2 Marking materials.

Table 1. Marking Materials

Paint ¹				Glass Beads ²	
Type	Color	Fed Std. 595 Number	Application Rate Maximum	Type	Application Rate Minimum
Waterborne Type II	Yellow	33538 or 33655	115 ft ² /gal	No Beads	No Beads
Waterborne Type II	Black	37038	115 ft ² /gal	No Beads	No Beads

¹ See paragraph 620-2.2a

² See paragraph 620-2.2b

- a) **Paint.** Paint shall be waterborne in accordance with the requirements of this paragraph. Paint colors shall comply with Federal Standard No. 595.
Waterborne. Paint shall meet the requirements of Federal Specification TT-P-1952F, Type II. The non-volatile portion of the vehicle for all paint types shall be composed of a 100% acrylic polymer as determined by infrared spectral analysis.
- b) **Reflective media.** Not Used.

CONSTRUCTION METHODS

620-3.1 Weather limitations. Painting shall only be performed when the surface is dry, and the ambient temperature and the pavement surface temperature meet the manufacturer's recommendations in accordance with paragraph 620-2.1. Painting operations shall be discontinued when the ambient or surface temperatures does not meet the manufacturer's recommendations. Markings shall not be applied when the wind speed exceeds 10 mph unless windscreens are used to shroud the material guns. Markings shall not be applied when weather conditions are forecasts to not be within the manufacturers' recommendations for application and dry time.

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 or airless type marking machine with automatic glass bead dispensers suitable for application of traffic paint. It shall produce an even and uniform film thickness and appearance of both paint and glass beads at the required coverage and shall apply markings of uniform cross-sections and clear-cut edges without running or spattering and without overspray. The marking equipment for both paint and beads shall be calibrated daily.

620-3.3 Preparation of surfaces. Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other contaminants that would reduce the bond between the paint and the pavement. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the RPR. After the cleaning operations, sweeping, blowing, or rinsing with pressurized water shall be performed to ensure the surface is clean and free of grit or other debris left from the cleaning process.

- a. **Preparation of new pavement surfaces.** The area to be painted shall be cleaned by broom, blower, water blasting, or by other methods approved by the RPR to remove all contaminants, including PCC curing compounds, minimizing damage to the pavement surface.
- b. **Preparation of pavement to remove existing markings.** Existing pavement markings shall be removed by rotary grinding, water blasting, or by other methods approved by the RPR minimizing damage to the pavement surface. The removal area may need to be larger than the area of the markings to eliminate ghost markings. After removal of markings on asphalt pavements, apply a fog seal or seal coat to 'block out' the removal area to eliminate 'ghost' markings.
- c. **Preparation of pavement markings prior to remarking.** Prior to remarking existing markings, loose existing markings must be removed minimizing damage to the pavement surface, with a method approved by the RPR. After removal, the surface shall be cleaned of all residue or debris.

Prior to the application of markings, the Contractor shall certify in writing that the surface is dry and free from dirt, grease, oil, laitance, or other foreign material that would prevent the bond of the paint to the pavement or existing markings. This certification along with a copy of the paint manufactures application and surface preparation requirements must be submitted to the RPR prior to the initial application of markings.

620-3.4 Layout of markings. The proposed markings shall be laid out in advance of the paint application. The locations of markings to receive glass beads shall be shown on the plans.

620-3.5 Application. A period of 30 days shall elapse between placement of surface course or seal coat and application of the permanent paint markings. 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 RPR.

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:

Marking Dimensions and Spacing Tolerance

Dimension and Spacing	Tolerance
36 inch or less	±1/2 inch
greater than 36 inch to 6 feet	±1 inch
greater than 6 feet to 60 feet	±2 inch
greater than 60 feet	±3 inch

The paint shall be mixed in accordance with the manufacturer's instructions and applied to the pavement with a marking machine at the rate shown in Table 1. The addition of thinner will not be permitted.

Glass beads shall not be used.

620-3.6 Application of performed thermoplastic airport pavement markings. Preformed thermoplastic pavement markings not used.

620-3.7 Control strip. Prior to the full application of airfield markings, the Contractor shall prepare a control strip in the presence of the RPR. The Contractor shall demonstrate the surface preparation method and all striping equipment to be used on the project. The marking equipment must achieve the prescribed application rate of paint. Prior to acceptance of the control strip, markings must be evaluated during darkness to ensure a uniform appearance.

620-3.8 Retro-reflectance. Reflectance shall be measured with a portable retro-reflectometer meeting ASTM E1710 (or equivalent). A total of 6 reading shall be taken over a 6 square foot area with 3 readings taken from each direction. The average shall be equal to or above the minimum levels of all readings which are within 30% of each other.

Minimum Retro-Reflectance Values

Material	Retro-reflectance mcd/m ² /lux		
	White	Yellow	Red
Initial Type I	300	175	35
Initial Type III	600	300	35
Initial Thermoplastic	225	100	35
All materials, remark when less than ¹	100	75	10

¹ Prior to remarking, determine if removal of contaminants on markings will restore retro-reflectance

620-3.9 Protection and cleanup. After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. The Contractor shall remove from the work area all debris, waste, loose reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the RPR. 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 Surface preparation shall be considered incidental to the pavement markings and no separate measurement shall be made.

620-4.2 The quantity of markings to be paid for shall be measured by the number of square feet of painting.

620-4.3 Reflective media shall be considered incidental to the pavement markings requiring its use, and no separate measurement shall be made.

620-4.4 Marking removal will be measured by the number of square feet of marking removed.

BASIS OF PAYMENT

This price for all items shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item complete in place and accepted by the RPR in accordance with these specifications:

620-5.1 Surface preparation shall be considered incidental to the pavement markings; no separate payment will be made.

620-5.2 Payment for markings shall be made at the contract price for the number of square feet of painting, inclusive of all surface preparation and reflective media.

620-5.3 Reflective media shall be considered incidental to the pavement markings requiring its use. No separate payment will be made.

620-5.4 Payment for marking removal will be made at the contract unit price per square foot of marking removed.

Payment will be made under:

- Item P-620-5.1 Pavement Marking, Yellow, without Reflective Beads – per square feet
- Item P-620-5.2 Pavement Marking, Black – per square feet

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D476	Standard Classification for Dry Pigmentary Titanium Dioxide Products
ASTM D968	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM D1652	Standard Test Method for Epoxy Content of Epoxy Resins
ASTM D2074	Standard Test Method for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method
ASTM D2240	Standard Test Method for Rubber Property - Durometer Hardness
ASTM D7585	Standard Practice for Evaluating Retroreflective Pavement Markings Using Portable Hand-Operated Instruments
ASTM E303	Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester
ASTM E1710	Standard Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retro reflectometer
ASTM E2302	Standard Test Method for Measurement of the Luminance Coefficient Under Diffuse Illumination of Pavement Marking Materials Using a Portable Reflectometer
ASTM G154	Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials Code of Federal Regulations (CFR) 40 CFR Part 60, Appendix A-7, Method 24 Determination of volatile matter content, water content, density, volume solids, and weight solids of surface coatings 29 CFR Part 1910.1200 Hazard Communication

Federal Specifications (FED SPEC)

FED SPEC TT-B-1325D	Beads (Glass Spheres) Retro-Reflective
FED SPEC TT-P-1952F	Paint, Traffic and Airfield Marking, Waterborne FED STD 595 Colors used in Government Procurement

Commercial Item Description

A-A-2886B	Paint, Traffic, Solvent Based

Advisory Circulars (AC)

BHM – Taxiway Alpha Emergency Patching
Birmingham, Alabama

AC 150/5340-1 Standards for Airport Markings

AC 150/5320-12 Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surface

END OF P-620 DOCUMENT



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

Subject: Operational Safety on
Airports During Construction

Date: 12/13/2017
Initiated By: AAS-100

AC No: 150/5370-2G
Change:

1 **Purpose.**

This AC sets forth guidelines for operational safety on airports during construction.

2 **Cancellation.**

This AC cancels AC 150/5370-2F, *Operational Safety on Airports during Construction*, dated September 29, 2011.

3 **Application.**

This AC assists airport operators in complying with Title 14 Code of Federal Regulations (CFR) Part 139, *Certification of Airports*. 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). See Grant Assurance No. 34, *Policies, Standards, and Specifications*. While we do not require non-certificated airports without grant agreements or airports using Passenger Facility Charge (PFC) Program funds for construction projects to adhere to these guidelines, we recommend that they do so to help these airports maintain operational safety during construction.

4 **Related Documents.**

ACs and Orders referenced in the text of this AC do not include a revision letter, as they refer to the latest version. Appendix A contains a list of reading material on airport construction, design, and potential safety hazards during construction, as well as instructions for obtaining these documents.

5 **Principal Changes.**

The AC incorporates the following principal changes:

1. Notification about impacts to both airport owned and FAA-owned NAVAIDs was added. See paragraph 2.13.5.3, NAVAIDs.

2. Guidance for the use of orange construction signs was added. See paragraph 2.18.4.2, Temporary Signs.
3. Open trenches or excavations may be permitted in the taxiway safety area while the taxiway is open to aircraft operations, subject to restrictions. See paragraph 2.22.3.4, Excavations.
4. Guidance for temporary shortened runways and displaced thresholds has been enhanced. See Figure 2-1 and Figure 2-2.
5. Figures have been improved and a new Appendix F on the placement of orange construction signs has been added.

Hyperlinks (allowing the reader to access documents located on the internet and to maneuver within this document) are provided throughout this document and are identified with underlined text. When navigating within this document, return to the previously viewed page by pressing the “ALT” and “ ← ” keys simultaneously.

Figures in this document are schematic representations and are not to scale.

6 **Use of Metrics.**

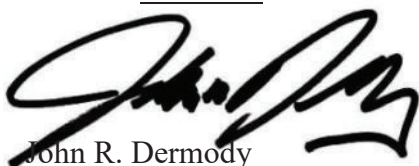
Throughout this AC, U.S. customary units are used followed with “soft” (rounded) conversion to metric units. The U.S. customary units govern.

7 **Where to Find this AC.**

You can view a list of all ACs at http://www.faa.gov/regulations_policies/advisory_circulars/. You can view the Federal Aviation Regulations at http://www.faa.gov/regulations_policies/faa_regulations/.

8 **Feedback on this AC.**

If you have suggestions for improving this AC, you may use the Advisory Circular Feedback form at the end of this AC.



John R. Dermody
Director of Airport Safety and Standards

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CHAPTER 1. PLANNING AN AIRFIELD CONSTRUCTION PROJECT

1.1 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, the concepts, methods and procedures described may also enhance the day-to-day airport maintenance operations, such as lighting maintenance and snow removal operations.

1.2 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 and 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 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:

1.2.1 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.

1.2.2 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 Approach Category (AAC) and Airplane Design Group (ADG) of the airplanes that operate on each runway; the ADG and Taxiway Design Group (TDG)¹ for each affected taxiway; designated approach visibility minimums;

¹ Find Taxiway Design Group information in AC 150/5300-13, *Airport Design*.

available approach and departure procedures; most demanding aircraft; declared distances; available air traffic control services; airport Surface Movement Guidance and Control System (SMGCS) plan; and others. The applicable seasons, days and times for certain operations should also be identified as applicable.

1.2.3 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 the 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 Appendix E.

1.2.4 Take Required Measures to Revise 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 widely among airports, this AC presents general guidance on those subjects.

1.2.5 Manage Safety Risk.

The FAA is committed to incorporating proactive safety risk management (SRM) tools into its decision-making processes. FAA Order 5200.11, *FAA Airports (ARP) Safety Management System (SMS)*, requires the FAA to conduct a Safety Assessment for certain triggering actions. Certain airport projects may require the airport operator to provide a Project Proposal Summary to help the FAA determine whether a Safety Assessment is required prior to FAA approval of the CSPP. 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 a Safety Risk Assessment. If the FAA requires an assessment, 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.

1.3 **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 A for a list of related reading material.

1.3.1 List Requirements.

A CSPP must be developed for each on-airfield construction project funded by the Airport Improvement Program (AIP) or located on an airport certificated under Part 139. For on-airfield construction projects at Part 139 airports funded without AIP funds, the preparation of a CSPP represents an acceptable method the certificate holder may use to meet Part 139 requirements during airfield construction activity. As per FAA Order 5200.11, projects that require Safety Assessments 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. The CSPP is subject to subsequent review and approval under the FAA's Safety Risk Management procedures (see paragraph 1.2.5).

1.3.2 Prepare a Safety Plan Compliance Document (SPCD).

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.

1.3.3 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.

1.4 **Who Is Responsible for Safety During Construction?**

1.4.1 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, such as military personnel at any airport supporting military operations (e.g. national guard or a joint use facility). 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.

1.4.2 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:

- 1.4.2.1 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.
- 1.4.2.2 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.
- 1.4.2.3 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 150/5370-12, Quality Management for Federally Funded Airport Construction 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.)
- 1.4.2.4 Ensure contact information is accurate for each representative/point of contact identified in the CSPP and SPCD.
- 1.4.2.5 Hold weekly or, if necessary, daily safety meetings with all affected parties to coordinate activities.
- 1.4.2.6 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.
- 1.4.2.7 Ensure construction personnel know applicable airport procedures and changes to those procedures that may affect their work.
- 1.4.2.8 Ensure that all temporary construction signs are located per the scheduled list for each phase of the project.
- 1.4.2.9 Ensure construction contractors and subcontractors undergo training required by the CSPP and SPCD.
- 1.4.2.10 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.
- 1.4.2.11 At certificated airports, ensure each CSPP and SPCD is consistent with Part 139.

- 1.4.2.12 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.
 - 1.4.2.13 Take immediate action to resolve safety deficiencies.
 - 1.4.2.14 At airports subject to 49 CFR Part 1542, *Airport Security*, ensure construction access complies with the security requirements of that regulation.
 - 1.4.2.15 Notify appropriate parties when conditions exist that invoke provisions of the CSPP and SPCD (for example, implementation of low-visibility operations).
 - 1.4.2.16 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 at <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>. The appropriate FAA Airports Regional or District Office can provide assistance in determining which objects require an aeronautical study.
 - 1.4.2.17 Ensure prompt transmission of the Airport Sponsor Strategic Event Submission, FAA Form 6000-26, located at https://oeaaa.faa.gov/oeaaa/external/content/AIRPORT_SPONSOR_STRATEGIC_EVENT_SUBMISSION_FORM.pdf, to assure proper coordination for NAS Strategic Interruption per Service Level Agreement with ATO.
 - 1.4.2.18 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. The FAA Airports Regional or District office will determine if further coordination within the FAA is needed. Coordinate with appropriate local and other federal government agencies, such as Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), Transportation Security Administration (TSA), and the state environmental agency.
- 1.4.3 Define Construction Contractor's Responsibilities.
- The contractor is responsible for complying with the CSPP and SPCD. The contractor must:

- 1.4.3.1 Submit a Safety Plan Compliance Document (SPCD) to the airport operator describing how it will comply with the requirements of the CSPP and supply any details that could not be determined before contract award. The SPCD must include a certification statement by the contractor, indicating an understanding of the operational safety requirements of the CSPP and the assertion of compliance with 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.
- 1.4.3.2 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.
- 1.4.3.3 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.
- 1.4.3.4 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 when active construction is taking place.
- 1.4.3.5 Conduct sufficient inspections to ensure construction personnel comply with the CSPP and SPCD and that there are no altered construction activities that could create potential safety hazards.
- 1.4.3.6 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.
- 1.4.3.7 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.
- 1.4.3.8 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 at <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

- 1.4.3.9 Ensure that all necessary safety mitigations are understood by all parties involved, and any special requirements of each construction phase will be fulfilled per the approved timeframe.
- 1.4.3.10 Participate in pre-construction meetings to review construction limits, safety mitigations, NOTAMs, and understand all special airport operational needs during each phase of the project.

1.4.4 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 are strongly encouraged to:

1. Develop, or have a consultant develop, a project specific CSPP and submit it to the airport operator. The airport operator may forgo a complete CSPP submittal and instead incorporate appropriate operational safety principles and measures addressed in the advisory circular within their tenant lease agreements.
2. In coordination with its contractor, develop an SPCD and submit it to the airport operator for approval issued prior to issuance of a Notice to Proceed.
3. Ensure that construction personnel are familiar with safety procedures and regulations on the airport during all phases of the construction.
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 when 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, as specified in the CSPP and SPCD.
8. Ensure prompt submittal through the airport operator of Form 7460-1 for conducting an aeronautical study of contractor equipment such as tall equipment (cranes, concrete pumps, other), stock piles, and haul routes. The FAA encourages online submittal of forms for expediency at <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.
9. Participate in pre-construction meetings to review construction limits, safety mitigations, NOTAMs, and understand all special airport operational needs during each phase of the project.

CHAPTER 2. CONSTRUCTION SAFETY AND PHASING PLANS

2.1 Overview.

Aviation safety is the primary consideration at airports, especially during construction. The airport operator's 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 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.

2.2 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.

2.3 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 × 11 inch or 11 × 17 inch format for compatibility with the FAA's Obstruction Evaluation / Airport Airspace Analysis (OE / AAA) process.

2.3.1 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.

2.3.2 Submit a CSPP.

The CSPP should be formally submitted for FAA approval when the project design is 80 percent to 90 percent 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.

2.3.3 Submit an SPCD.

The contractor should submit the SPCD to the airport operator for approval to be issued prior to the Notice to Proceed.

2.3.4 Submit CSPP Revisions.

All revisions to a previously approved CSPP must be re-submitted to the FAA for review and approval/disapproval action.

2.4 **Meet CSPP Requirements.**

2.4.1 To the extent possible, the CSPP should address the following as outlined in Chapter 3, Guidelines for Writing a CSPP. 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. 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, temporary, including orange construction signs, and permanent signs.
15. Marking and signs for access routes.
16. Hazard marking and lighting.
- a. Purpose.
 - b. Equipment.
17. Work zone lighting for nighttime construction (if applicable).
18. 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). Provide details for any adjustments to Taxiway Safety Area width to allow continued operation of smaller aircraft. See paragraph 2.22.3.
 - d. Taxiway Object Free Area (TOFA). Provide details for any continued aircraft operations while construction occurs within the TOFA. See paragraph 2.22.4.
 - e. Obstacle Free Zone (OFZ).
 - f. Runway approach/departure surfaces.
19. Other limitations on construction.
- a. Prohibitions.

b. Restrictions.

2.4.2 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. Who to contact if the ATCT cannot reach the contractor’s designated person by radio.

- 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 Materials (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. Temporary orange construction signs.
 - d. 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. Work zone lighting for nighttime construction (if applicable). Discuss proposed equipment, locations, aiming, and shielding to prevent interference with air traffic control and aircraft operations.

18. Protection of runway and taxiway safety areas, 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 to ensure the safe passage of aircraft where Taxiway Safety Area or Taxiway Object Free Area standards cannot be maintained.
 - c. Equipment and methods for separation of construction operations from aircraft operations, including details of barricades.
19. Other limitations on construction should be identified in the CSPP and should not require an entry in the SPCD.

2.5 **Coordination.**

Airport operators, or tenants responsible for design, bidding and conducting construction on their leased properties, should ensure at all project developmental stages, such as predesign, prebid, and preconstruction conferences, they capture the subject of airport operational safety during construction (see AC 150/5370-12, *Quality Management for Federally Funded Airport Construction Projects*). In addition, the following should be coordinated as required:

2.5.1 Progress Meetings.

Operational safety should be a standing agenda item for discussion during progress meetings throughout the project developmental stages.

2.5.2 Scope or Schedule Changes.

Changes in the scope or duration at any of the project stages may require revisions to the CSPP and review and approval by the airport operator and the FAA (see paragraph 1.4.2.17).

2.5.3 FAA ATO Coordination.

Early coordination with FAA ATO is highly recommended during the design phase and is required for scheduling Technical Operations shutdowns prior to construction. Coordination is critical to restarts of NAVAID services and to the establishment of any special procedures for the movement of aircraft. Formal agreements between the airport operator and appropriate FAA offices are recommended. All relocation or adjustments to NAVAIDs, or changes to final grades in critical areas, should be coordinated with FAA ATO and 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 paragraph 2.13.5.3.2 for required FAA notification regarding FAA-owned NAVAIDs.)

2.6 **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 this 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.

2.6.1 Phase Elements.

For each phase the CSPP should detail:

- Areas closed to aircraft operations.
- Duration of closures.
- Taxi routes and/or areas of reduced TSA and TOFA to reflect reduced ADG use.
- ARFF access routes.
- Construction staging, disposal, and cleanout areas.
- Construction access and haul routes.
- Impacts to NAVAIDs.
- Lighting, marking, and signing changes.
- Available runway length and/or reduced RSA and ROFA to reflect reduced ADG use.
- Declared distances (if applicable).
- Required hazard marking, lighting, and signing.
- Work zone lighting for nighttime construction (if applicable).
- Lead times for required notifications.

2.6.2 Construction Safety Drawings.

Drawings specifically indicating operational safety procedures and methods in affected areas (i.e., construction safety drawings) should be developed for each construction phase. Such drawings should be included in the CSPP as referenced attachments and should also be included in the contract drawing package.

2.7 **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 ATO will support operational simulations. See Appendix E for an example of a table showing temporary operations versus current operations. The tables in Appendix E can be useful for coordination among all interested parties, including FAA Lines of Business.

2.7.1 Identification of Affected Areas.

Identifying areas and operations affected by the construction helps to determine possible safety problems. The affected areas should be identified in the construction safety drawings for each construction phase. (See paragraph 2.6.2.) Of particular concern are:

2.7.1.1 **Closing, or Partial Closing, of Runways, Taxiways and Aprons, and Displaced Thresholds.**

When a runway is partially closed, a portion of the pavement is unavailable for any aircraft operation, meaning taxiing, landing, or takeoff 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 normally available for take-off in the direction of the displacement and for landing and takeoff in the opposite direction. Misunderstanding this difference, may result in issuance of an inaccurate NOTAM, and can lead to a hazardous condition.

2.7.1.1.1 Partially Closed Runways.

The temporarily closed portion of a partially closed runway will generally extend from the threshold to a taxiway that may be used for entering and exiting the runway. If the closed portion extends to a point between taxiways, pilots will have to back-taxi on the runway, which is an undesirable operation. See Figure 2-1 for a desirable configuration.

2.7.1.1.2 Displaced Thresholds.

Since the portion of the runway pavement between the permanent threshold and a standard displaced threshold is available for takeoff and for landing in the opposite direction, the temporary displaced threshold need not be located at an entrance/exit taxiway. See Figure 2-2.

2.7.1.2 Closing of aircraft rescue and fire fighting access routes.

2.7.1.3 Closing of access routes used by airport and airline support vehicles.

2.7.1.4 Interruption of utilities, including water supplies for fire fighting.

2.7.1.5 Approach/departure surfaces affected by heights of objects.

2.7.1.6 Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads.

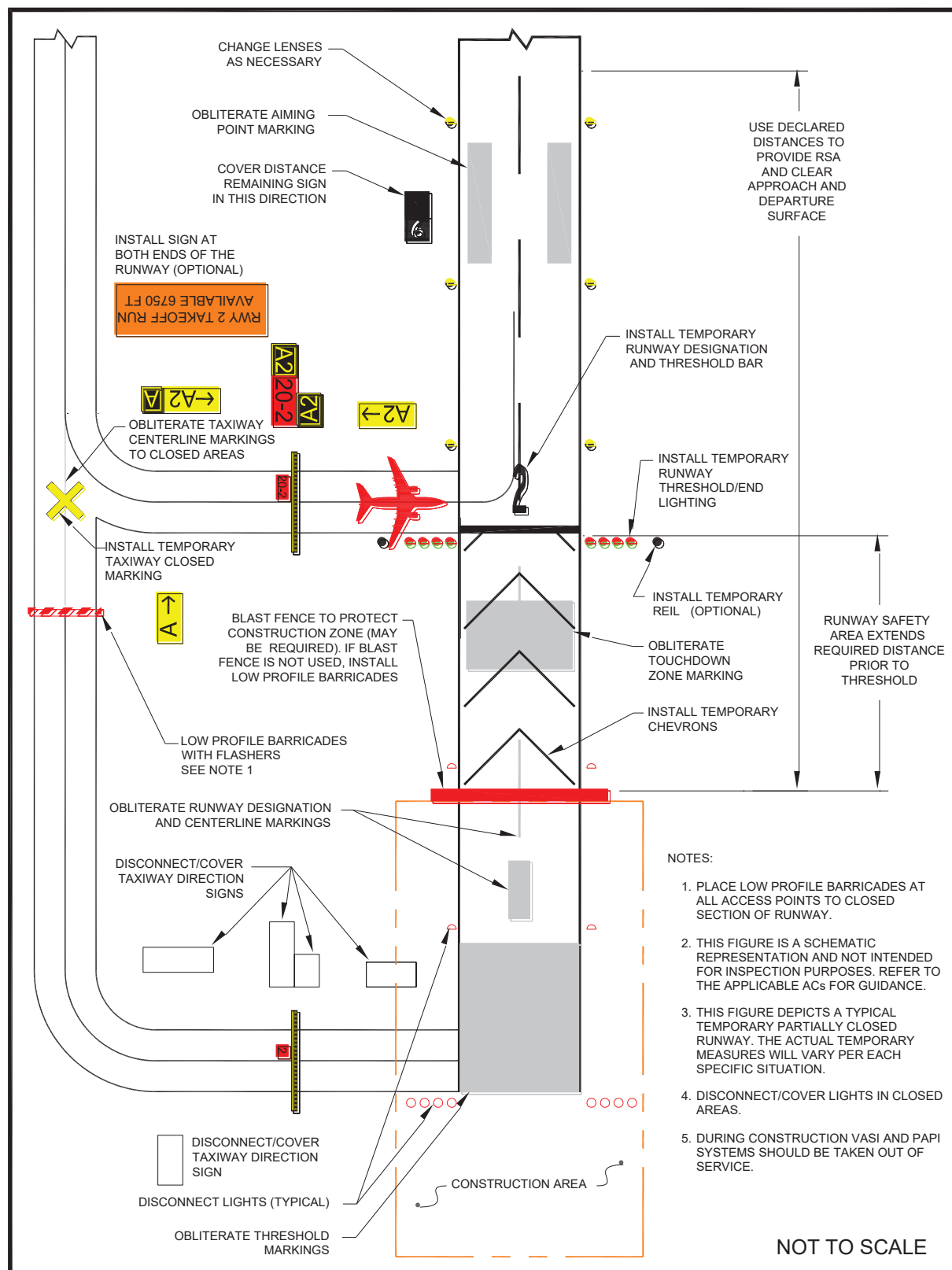
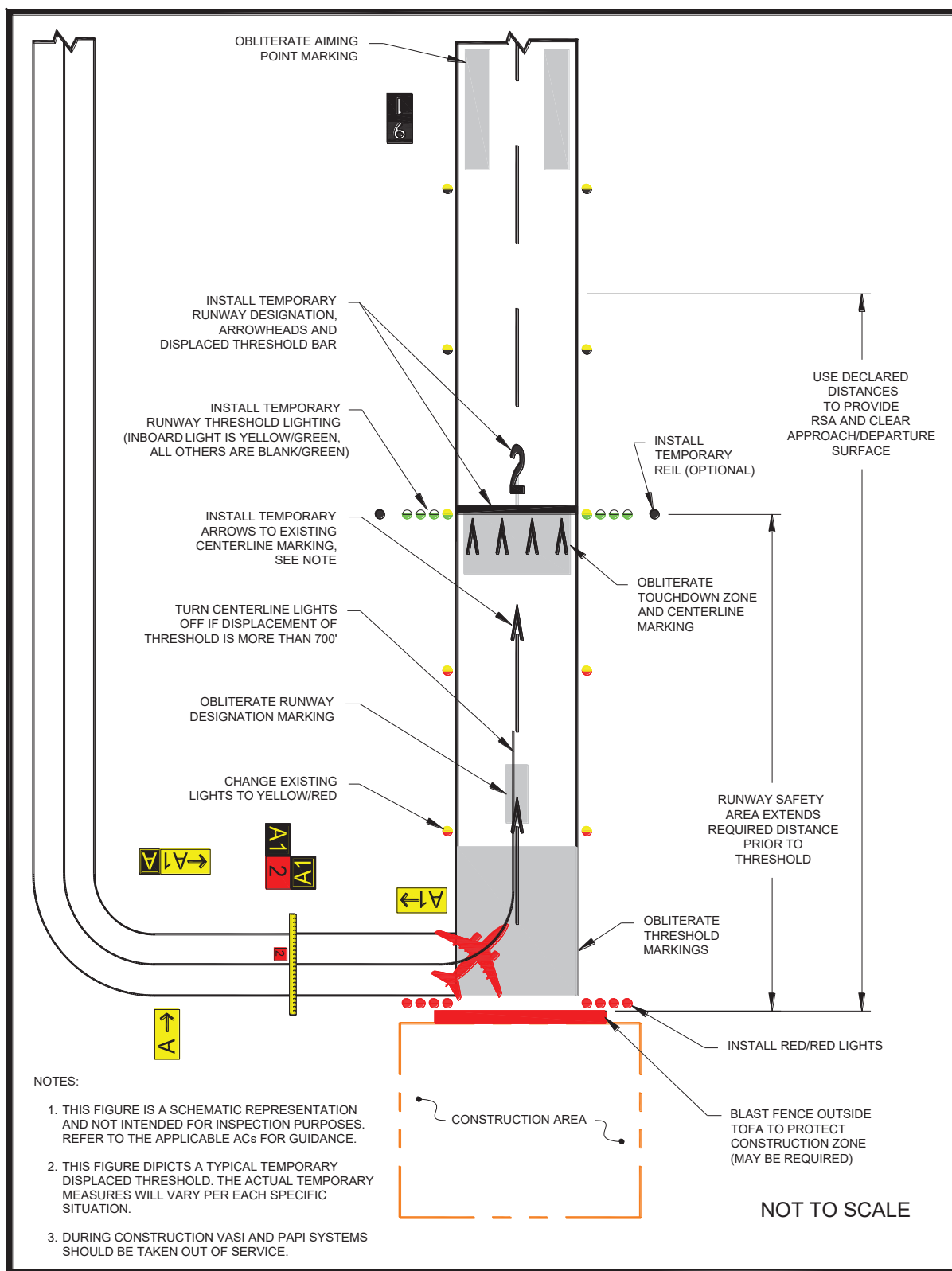
Figure 2-1. Temporary Partially Closed Runway

Figure 2-2. Temporary Displaced Threshold

Note: See paragraph 2.18.2.5.

2.7.2 Mitigation of Effects.

Establishment of specific procedures is necessary to maintain the safety and efficiency of airport operations. The CSPP must address:

- 2.7.2.1 Temporary changes to runway and/or taxi operations.
- 2.7.2.2 Detours for ARFF and other airport vehicles.
- 2.7.2.3 Maintenance of essential utilities.
- 2.7.2.4 Temporary changes to air traffic control procedures. Such changes must be coordinated with the ATO.

2.8 **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 2.13.5.3.) 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 2.13.2.). 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 2.13.5.3.)

2.9 **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:

2.9.1 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 2.18.2.) 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 from blowing or tracked material. See paragraphs 2.10 and 2.11.

2.9.2 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, with associated training requirements:

2.9.2.1 **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.

2.9.2.2 **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 2.13.1 for further information.

2.9.2.3 **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. Address whether access gates will be blocked or inoperative or if a rally point will be blocked or inaccessible.

- 2.9.2.4 Marking and lighting of vehicles in accordance with AC 150/5210-5, *Painting, Marking, and Lighting of Vehicles Used on an Airport*.
- 2.9.2.5 Description of proper vehicle operations on various areas under normal, lost communications, and emergency conditions.
- 2.9.2.6 Required escorts.
- 2.9.2.7 **Training Requirements for Vehicle Drivers to Ensure Compliance with the Airport Operator's Vehicle Rules and Regulations.**

Specific training should be provided to vehicle operators, including those providing escorts. See AC 150/5210-20, *Ground Vehicle Operations on Airports*, for information on training and records maintenance requirements.
- 2.9.2.8 **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. At non-towered airports, all aircraft movements and flight operations rely on aircraft operators to self-report their positions and intentions. However, there is no requirement for an aircraft to have radio communications. Because aircraft do not always broadcast their positions or intentions, visual checking, radio monitoring, and situational awareness of the surroundings is critical to safety.
- 2.9.2.9 **Two-Way Radio Communication Procedures.**
- 2.9.2.9.1 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:

 1. Airport operations
 2. ATCT

3. Common Traffic Advisory Frequency (CTAF), which may include UNICOM, MULTICOM.
4. 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.

2.9.2.9.2 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.

2.9.2.9.3 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.

2.9.2.9.4 Proper radio usage, including read back requirements.

2.9.2.9.5 Proper phraseology, including the International Phonetic Alphabet.

2.9.2.9.6 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.

2.9.2.10 **Maintenance of the secured area of the airport, including:**

2.9.2.10.1 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 the 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.

2.9.2.10.2 Badging Requirements.

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.

2.10 **Wildlife Management.**

The CSPP and SPCD must be in accordance with the airport operator's wildlife hazard management plan, if applicable. See 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:

2.10.1 Trash.

Food scraps must be collected from construction personnel activity.

2.10.2 Standing Water.

2.10.3 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.

2.10.4 Poorly Maintained Fencing and Gates.

See paragraph 2.9.2.10.1.

2.10.5 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.

2.11 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) or covers 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*.

2.12 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*.

2.13 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.

2.13.1 List of Responsible Representatives/points of contact for all involved parties, and procedures for contacting each of them, including after hours.

2.13.2 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 either enter the NOTAM into NOTAM Manager, or 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 2.7.1.1 about issuing NOTAMs for partially closed runways versus runways with displaced thresholds.

2.13.3 Emergency notification procedures for medical, fire fighting, and police response.

2.13.4 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:

1. The deactivation and subsequent reactivation of water lines or fire hydrants, or
2. The rerouting, blocking and restoration of emergency access routes, or
3. The use of hazardous materials on the airfield.

2.13.5 Notification to the FAA.

2.13.5.1 **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 A to download the form. Further guidance is available on the FAA web site at oeaaa.faa.gov.

2.13.5.2 **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 A to download the form.

2.13.5.3 **NAVAIDs.**

For emergency (short-notice) notification about impacts to both airport owned and FAA owned NAVAIDs, contact: 866-432-2622.

2.13.5.3.1 Airport Owned/FAA Maintained.

If construction operations require a shutdown of 24 hours or greater in duration, 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, using Strategic Event Coordination (SEC) Form 6000.26 contained within FAA Order 6000.15, *General Maintenance Handbook for National Airspace System (NAS) Facilities*.

2.13.5.3.2 FAA Owned.

1. 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, using SEC Form 6000.26.
2. 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. Refer to active Service Level Agreement with ATO for specifics.

2.14 **Inspection Requirements.**

2.14.1 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 D, Construction Project Daily Safety Inspection Checklist. See also AC 150/5200-18, Airport Safety Self-Inspection. Airport operators holding a Part 139 certificate are required to conduct self-inspections during unusual conditions, such as construction activities, that may affect safe air carrier operations.

2.14.2 Interim Inspections.

Inspections should be conducted of all areas to be (re)opened to aircraft traffic to ensure the proper operation of lights and signs, for correct markings, and absence of FOD. The contractor should conduct an inspection of the work area with airport operations personnel. The contractor should ensure that all construction materials have been secured, all pavement surfaces have been swept clean, all transition ramps have been properly constructed, and that surfaces have been appropriately marked for aircraft to operate safely. Only if all items on the list meet with the airport operator's approval should the air traffic control tower be notified to open the area to aircraft operations. The contractor should be required to retain a suitable workforce and the necessary equipment at the work area for any last minute cleanup that may be requested by the airport operator prior to opening the area.

2.14.3 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.

2.15 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.

2.16 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.

2.17 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).

2.18 Runway and Taxiway Visual Aids.

This 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 that are to continue to perform their functions during construction remain in place and operational. Visual NAVAIDs that are not serving their intended function during construction must be temporarily disabled, covered, or modified as necessary. The CSPP must address the following, as appropriate:

2.18.1 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, and other wind currents and constructed of materials that will minimize damage to an aircraft in the event of inadvertent contact. Items used to secure such markings must be of a color similar to the marking.

2.18.2 Markings.

During the course of construction projects, temporary pavement markings are often required to allow for aircraft operations during or between work periods. During the design phase of the project, the designer should coordinate with the project manager,

airport operations, airport users, the FAA Airports project manager, and Airport Certification Safety Inspector for Part 139 airports to determine minimum temporary markings. The FAA Airports project manager will, wherever a runway is closed, coordinate with the appropriate FAA Flight Standards Office and disseminate findings to all parties. Where possible, the temporary markings on finish grade pavements should be placed to mirror the dimensions of the final markings. Markings must be in compliance with the standards of AC 150/5340-1, *Standards for Airport Markings*, except as noted herein. 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 2.18.2.1.2.)

2.18.2.1 Closed Runways and Taxiways.

2.18.2.1.1 Permanently Closed Runways.

For runways, obliterate the threshold marking, runway designation marking, and touchdown zone markings, and place an X at each end and at 1,000-foot (300 m) intervals. For a multiple runway environment, if the lighted X on a designated number will be located in the RSA of an adjacent active runway, locate the lighted X farther down the closed runway to clear the RSA of the active runway. In addition, the closed runway numbers located in the RSA of an active runway must be marked with a flat yellow X.

2.18.2.1.2 Temporarily Closed Runways.

For runways that have been temporarily closed, place an X at each end of the runway directly on or as near as practicable to the runway designation numbers. For a multiple runway environment, if the lighted X on a designated number will be located in the RSA of an adjacent active runway, locate the lighted X farther down the closed runway to clear the RSA of the active runway. In addition, the closed runway numbers located in the RSA of an active runway must be marked with a flat yellow X. See Figure 2-3. See also paragraph 2.18.3.3.

2.18.2.1.3 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 2.7.1.1 for the difference between partially closed runways and runways with displaced thresholds. Because of the temporary nature of threshold displacement due to construction, it is not necessary to re-adjust the existing runway centerline markings to meet standard spacing for a runway with a visual approach. Some of the requirements below may be waived in the cases of low-activity airports and/or short duration changes that are measured in days rather than weeks. Consider whether the presence of an airport traffic

control tower allows for the development of special procedures. Contact the appropriate FAA Airports Regional or District Office for assistance.

Figure 2-3. Markings for a Temporarily Closed Runway

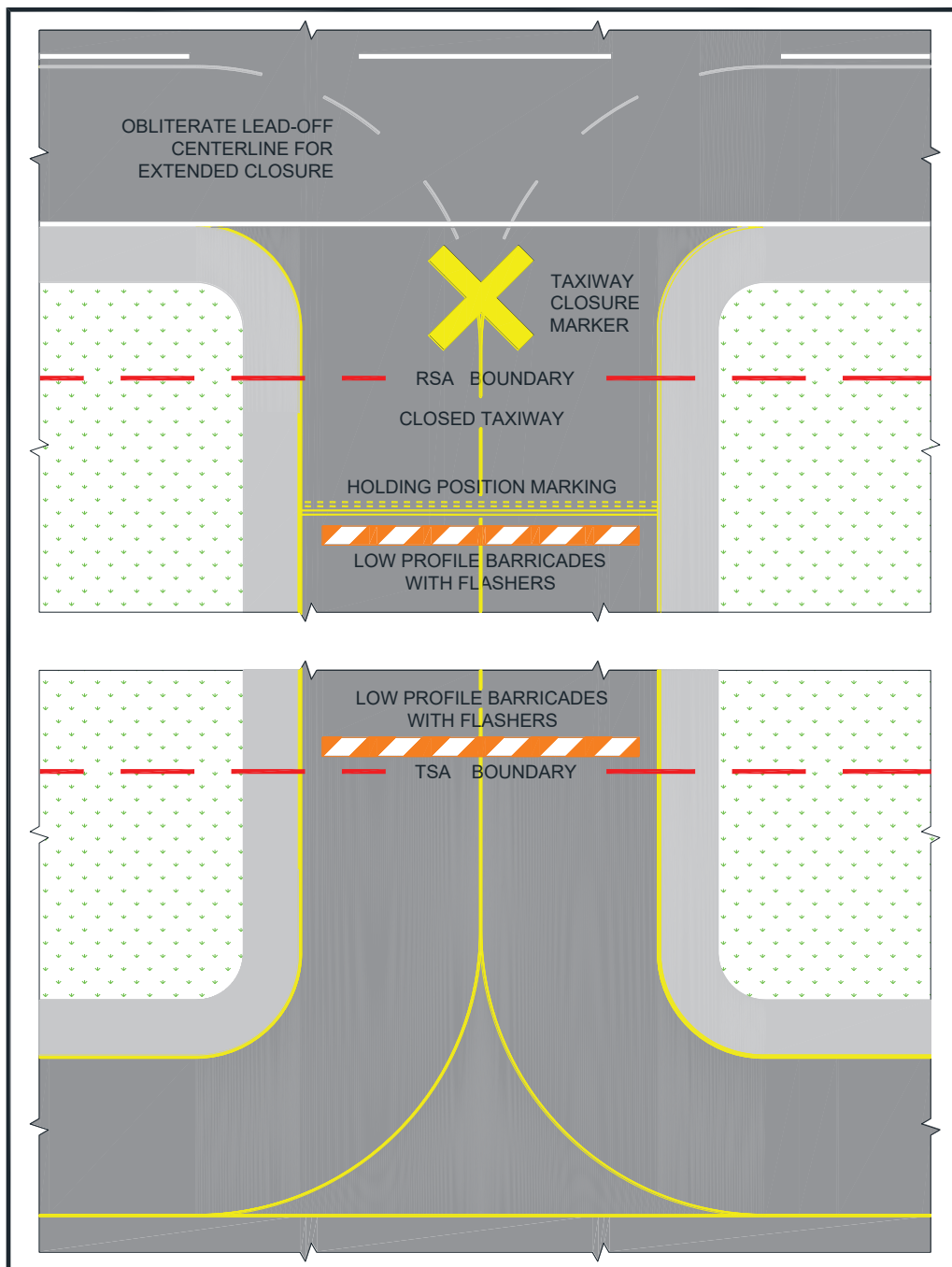


1. **Partially Closed Runways.** Pavement markings for temporary closed portions of the runway consist of a runway threshold bar, runway designation, and yellow chevrons to identify pavement areas that are unsuitable for takeoff or landing (see [AC 150/5340-1](#)). Obliterate or cover markings prior to the moved threshold. Existing touchdown zone markings beyond the moved threshold may remain in place. Obliterate aiming point markings. Issue appropriate NOTAMs regarding any nonstandard markings. See [Figure 2-4](#).
2. **Displaced Thresholds.** Pavement markings for a displaced threshold consist of a runway threshold bar, runway designation, 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](#). Obliterate markings prior to the displaced threshold. Existing touchdown zone markings beyond the displaced threshold may remain in place. Obliterate aiming point markings. Issue appropriate NOTAMs regarding any nonstandard markings. See [Figure 2-2](#).

2.18.2.1.4 Taxiways.

1. **Permanently Closed Taxiways.** AC 150/5300-13 Airport Design, 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. See Figure 2-4.

Figure 2-4. Temporary Taxiway Closure



2. **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 and taxiway to taxiway turns, leading to the closed section. Always obliterate runway lead-off lines for high speed exits, regardless of the duration of the closure. 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. See Figure 2-4.

2.18.2.1.5 Temporarily Closed Airport.

When the airport is closed temporarily, mark all the runways as closed.

- 2.18.2.2 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. Items used to secure such markings must be of a color similar to the marking.

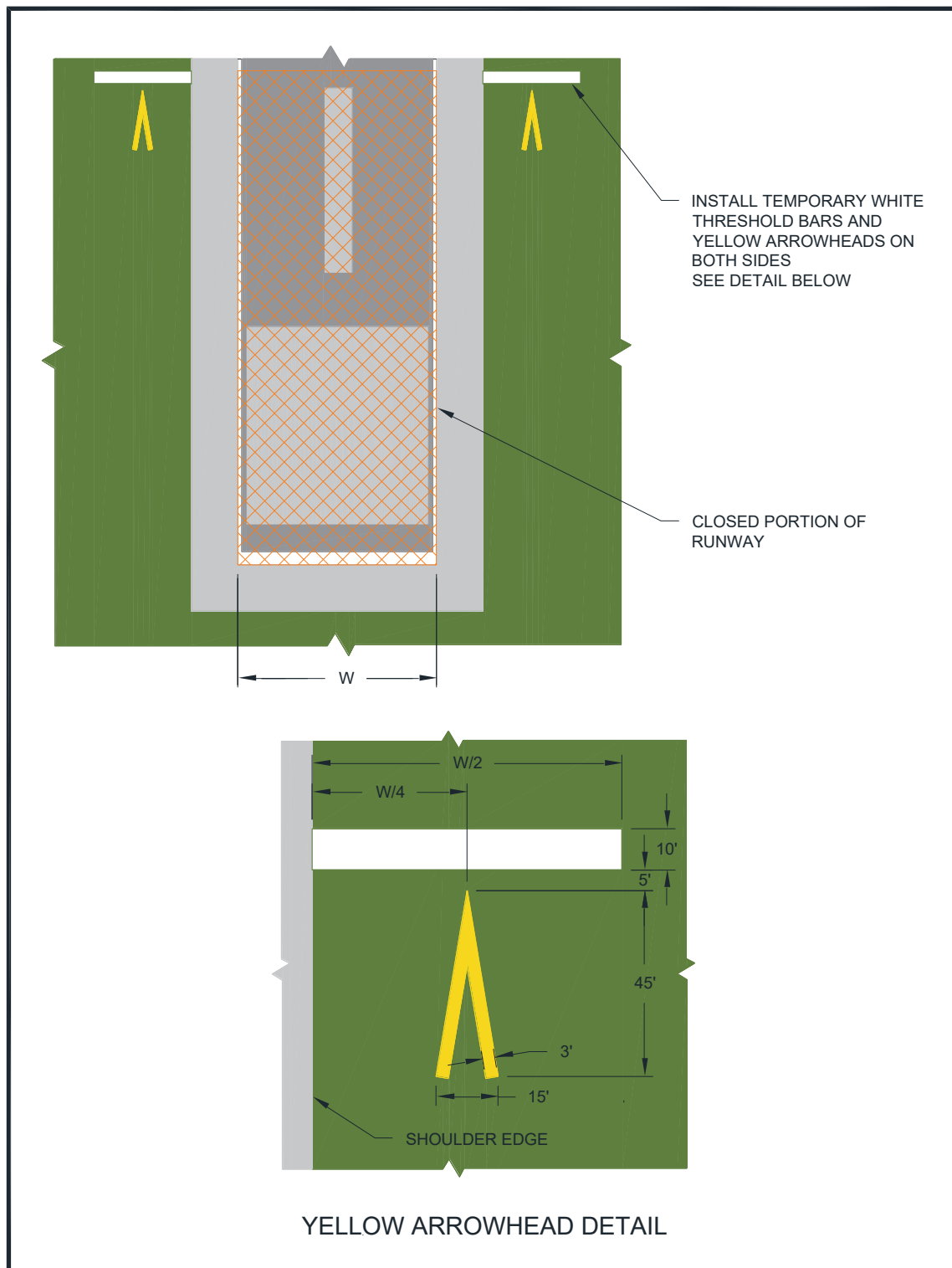
- 2.18.2.3 It may be necessary to remove or cover runway markings, including but not limited to, runway designation markings, threshold markings, centerline markings, edge stripes, touchdown zone markings and aiming point markings, depending on the length of construction and type of activity at the airport. 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.

- 2.18.2.4 If it is not possible to install threshold bars, chevrons, and arrows on the pavement, “temporary outboard white threshold bars and yellow arrowheads”, see Figure 2-5, may be used. Locate them outside of the runway pavement surface on both sides of the runway. The dimensions must be as shown in Figure 2-5. 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.

- 2.18.2.5 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. When applying temporary markings at night, it is recommended that the fast curing, Type II paint be used to help offset the higher humidity and cooler temperatures often experienced at night. Diluting the paint will substantially increase cure time and is not recommended. Glass beads are not recommended for temporary markings. Striated markings may also be used for certain temporary markings. AC

150/5340-1, Standards for Airport Markings, has additional guidance on temporary markings.

Figure 2-5. Temporary Outboard White Threshold Bars and Yellow Arrowheads



2.18.3 Lighting and Visual NAVAIDs.

This paragraph refers to standard runway and taxiway lighting systems. See below for hazard lighting. Lighting installation must be in conformance with AC 150/5340-30, *Design and Installation Details for Airport Visual Aids*, and fixture design in conformance with AC 150/5345-50, *Specification for Portable Runway and Taxiway Lights*. When disconnecting runway and taxiway lighting fixtures, disconnect the associated isolation transformers. See AC 150/5340-26, *Maintenance of Airport Visual Aid Facilities*, for disconnect procedures and safety precautions. 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. Maintain mandatory hold signs to operate normally in any situation where pilots or vehicle drivers could mistakenly be in that location. At towered airports certificated under Part 139, holding position signs are required to be illuminated on open taxiways crossing to closed or inactive runways. If the holding position sign is installed on the runway circuit for the closed runway, install a jumper to the taxiway circuit to provide power to the holding position sign for nighttime operations. Where it is not possible to maintain power to signs that would normally be operational, install barricades to exclude aircraft. Figure 2-1, Figure 2-2, Figure 2-3, and Figure 2-4 illustrate temporary changes to lighting and visual NAVAIDs.

2.18.3.1 **Permanently Closed Runways and Taxiways.**

For runways and taxiways that have been permanently closed, disconnect the lighting circuits.

2.18.3.2 **Temporarily Closed Runways and New Runways Not Yet Open to Air Traffic.**

If available, use a lighted X, both at night and during the day, placed at each end of the runway on or near the runway designation numbers facing the approach. (Note that the lighted X must be illuminated at all times that it is on a runway.) 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 2-6 shows a lighted X by day. Figure 2-7 shows a lighted X at night.

Figure 2-6. Lighted X in Daytime**Figure 2-7. Lighted X at Night**

2.18.3.3 **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.

2.18.3.3.1 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 fixtures in such a way as to prevent light leakage. See Figure 2-1.

2.18.3.3.2 Temporary Displaced Thresholds.

Edge lighting in the area of the displacement emits red light in the direction of approach and yellow light (white for visual runways) in the opposite direction. If the displacement is 700 feet or less, blank out centerline lights in the direction of approach or place the centerline lights out of service. 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. See Figure 2-2.

2.18.3.3.3 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.

2.18.3.3.4 A temporary threshold on an unlighted runway may be marked by retroreflective, elevated markers in addition to markings noted in paragraph 2.18.2.1.3. 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*.

2.18.3.3.5 Temporary threshold lights and runway 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 inch (7.6 cm) above ground. (The standard above ground height for airport lighting fixtures is 14 inches (35 cm)). 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.

2.18.3.3.6 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.

- 2.18.3.3.7 When runway thresholds are temporarily displaced, reconfigure yellow lenses (caution zone), as necessary, and place the centerline lights out of service.
- 2.18.3.3.8 Relocate the Visual Glide Slope Indicator (VGSI), such as Visual Approach Slope Indicator (VASI) and Precision Approach Path Indicator (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. See FAA JO 6850.2, *Visual Guidance Lighting Systems*, for installation criteria for FAA owned and operated NAVAIDs.
- 2.18.3.3.9 Issue a NOTAM to inform pilots of temporary lighting conditions.
- 2.18.3.4 **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 a way as to prevent light leakage.

2.18.4 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*.

2.18.4.1 **Existing Signs.**

Runway exit signs are to be covered for closed runway exits. Outbound destination signs are to be covered for closed runways. Any time a sign does not serve its normal function or would provide conflicting information, 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.

2.18.4.2 Temporary Signs.

Orange construction signs comprise a message in black on an orange background. Orange construction signs may help pilots be aware of changed conditions. The airport operator may choose to introduce these signs as part of a movement area construction project to increase situational awareness when needed. Locate signs outside the taxiway safety limits and ahead of construction areas so pilots can take timely action. Use temporary signs judiciously, striking a balance between the need for information and the increase in pilot workload. When there is a concern of pilot “information overload,” the applicability of mandatory hold signs must take precedence over orange construction signs recommended during construction. Temporary signs must meet the standards for such signs in Engineering Brief 93, *Guidance for the Assembly and Installation of Temporary Orange Construction Signs*. Many criteria in AC 150/5345-44, *Specification for Runway and Taxiway Signs*, are referenced in the Engineering Brief. Permissible sign legends are:

1. CONSTRUCTION AHEAD,
2. CONSTRUCTION ON RAMP, and
3. RWY XX TAKEOFF RUN AVAILABLE XXX FT.

Phasing, supported by drawings and sign schedule, for the installation of orange construction signs must be included in the CSPP or SPCD.

2.18.4.2.1 Takeoff Run Available (TORA) signs.

Recommended: Where a runway has been shortened for takeoff, install orange TORA signs well before the hold lines, such as on a parallel taxiway prior to a turn to a runway hold position. See EB 93 for sign size and location.

2.18.4.2.2 Sign legends are shown in Figure F-1.

Note: See Figure E-1, Figure E-2, Figure E-3, Figure F-2, and Figure F-3 for examples of orange construction sign locations.

2.19 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.

2.20 **Hazard Marking, Lighting and Signing.**

2.20.1 Hazard marking, lighting, and signing prevent pilots from entering areas closed to aircraft, and prevent 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.

2.20.2 Equipment.

2.20.2.1 **Barricades.**

Low profile 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 aircraft, gaps between barricades must be smaller than the wingspan of the smallest aircraft to be excluded; if barricades are intended to exclude vehicles, gaps between barricades must be smaller than the width of the excluded vehicles, generally 4 feet (1.2 meters). 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.

2.20.2.2 **Lights.**

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 feet (3 meters). 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.

2.20.2.3 **Supplement Barricades with Signs (for example) As Necessary.**

Examples are “No Entry” and “No Vehicles.” Be aware of the increased effects of wind and jet blast on barricades with attached signs.

2.20.2.4 Air Operations Area – General.

Barricades are not permitted in any active safety area or on the runway side of a runway hold line. Within a runway or taxiway object free area, and on aprons, use orange traffic cones, flashing or steady burning red lights as noted above, highly reflective 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 inch (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 inches 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, and 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 inch (7.6 cm) above the ground. Figure 2-8 and Figure 2-9 show sample barricades with proper coloring and flags.

Figure 2-8. Interlocking Barricades



Figure 2-9. Low Profile Barricades**2.20.2.5 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.

2.20.2.6 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.

2.20.2.7 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.

2.21 Work Zone Lighting for Nighttime Construction.

Lighting equipment must adequately illuminate the work area if the construction is to be performed during nighttime hours. Refer to [AC 150/5370-10](#) for minimum illumination levels for nighttime paving projects. Additionally, it is recommended that all support equipment, except haul trucks, be equipped with artificial illumination to safely

illuminate the area immediately surrounding their work areas. The lights should be positioned to provide the most natural color illumination and contrast with a minimum of shadows. The spacing must be determined by trial. Light towers should be positioned and adjusted to aim away from ATCT cabs and active runways to prevent blinding effects. Shielding may be necessary. Light towers should be removed from the construction site when the area is reopened to aircraft operations. Construction lighting units should be identified and generally located on the construction phasing plans in relationship to the ATCT and active runways and taxiways.

2.22 **Protection of Runway and Taxiway Safety Areas.**

Runway and taxiway safety areas, OFZs, OFAs, 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 2.13.5) 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.

2.22.1 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:

- 2.22.1.1 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, and appropriate NOTAMs issued. See AC 150/5300-13 for guidance on the use of declared distances.
- 2.22.1.2 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.
- 2.22.1.3 The CSPP and SPCD must provide procedures for ensuring adequate distance for protection from blasting operations, if required by operational considerations.

2.22.1.4 **Excavations.**

2.22.1.4.1 Open trenches or excavations are not permitted within the RSA while the runway is open. Backfill trenches before the runway is opened. If backfilling excavations before the runway must be opened is impracticable, 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.

2.22.1.4.2 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.

2.22.1.5 **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.

2.22.2 Runway Object Free Area (ROFA).

Construction, including excavations, may be permitted in the ROFA. However, equipment must be removed from the ROFA when not in use, and material should not be stockpiled in the 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.

2.22.3 Taxiway Safety Area (TSA).

2.22.3.1 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.) Since the width of the TSA is equal to the wingspan of the design aircraft, 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. Give special consideration to TSA dimensions at taxiway turns and intersections. (see AC 150/5300-13).

2.22.3.2 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.

2.22.3.3 The CSPP and SPCD must provide procedures for ensuring adequate distance for protection from blasting operations.

2.22.3.4 **Excavations.**

1. Curves. Open trenches or excavations are not permitted within the TSA while the taxiway is open. Trenches should be backfilled before the taxiway is opened. If backfilling excavations before the taxiway must be opened is impracticable, 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.
2. Straight Sections. Open trenches or excavations are not permitted within the TSA while the taxiway is open for unrestricted aircraft operations. Trenches should be backfilled before the taxiway is opened. If backfilling excavations before the taxiway must be opened is impracticable, cover the excavations to allow the safe passage of ARFF equipment and of the heaviest aircraft operating on the taxiway across the trench without causing damage to the equipment or aircraft. In rare circumstances where the section of taxiway is indispensable for aircraft movement, open trenches or excavations may be permitted in the TSA while the taxiway is open to aircraft operations, subject to the following restrictions:
 - a. Taxiing speed is limited to 10 mph.
 - b. Appropriate NOTAMs are issued.
 - c. Marking and lighting meeting the provisions of paragraphs 2.18 and 2.20 are implemented.
 - d. Low mass, low-profile lighted barricades are installed.
 - e. Appropriate temporary orange construction signs are installed.
3. 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.

2.22.3.5 **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 firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

2.22.4 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.

- 2.22.4.1 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. Give special consideration to TOFA dimensions at taxiway turns and intersections.
- 2.22.4.2 Offset taxiway centerline and edge pavement markings (do not use glass beads) may be used as a temporary measure to provide the required taxiway object free area. Where offset taxiway pavement markings are provided, centerline lighting, centerline reflectors, or taxiway edge reflectors are required. Existing lighting that does not coincide with the temporary markings must be taken out of service.
- 2.22.4.3 Construction activity, including open excavations, may be accomplished without adjusting the width of the taxiway object free area, subject to the following restrictions:
 - 2.22.4.3.1 Taxiing speed is limited to 10 mph.
 - 2.22.4.3.2 NOTAMs issued advising taxiing pilots of hazard and recommending reduced taxiing speeds on the taxiway.
 - 2.22.4.3.3 Marking and lighting meeting the provisions of paragraphs 2.18 and 2.20 are implemented.
 - 2.22.4.3.4 If desired, appropriate orange construction signs are installed. See paragraph 2.18.4.2 and Appendix F.
 - 2.22.4.3.5 Five-foot clearance is maintained between equipment and materials and any part of an aircraft (includes wingtip overhang). 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 usable pavement), then it will be necessary to move personnel and equipment for the passage of that aircraft.
 - 2.22.4.3.6 Flaggers furnished by the contractor must be used to direct and control construction equipment and personnel to a pre-established setback distance for safe passage of aircraft, and airline and/or airport personnel. Flaggers must also be used to direct taxiing aircraft. Due to liability issues, the airport operator should require airlines to provide flaggers for directing taxiing aircraft.

2.22.5 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.

2.22.6 Runway Approach/Departure Areas and Clearways.

All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces, as defined in 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.

2.22.6.1 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.

2.22.6.2 **Caution About Partial Runway Closures.**

When filing a NOTAM for a partial runway closure, clearly state 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).

2.22.6.3 **Caution About 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, or 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.

2.23 **Other Limitations on Construction.**

The CSPP must specify any other limitations on construction, including but not limited to:

2.23.1 Prohibitions.

- 2.23.1.1 No use of tall equipment (cranes, concrete pumps, and so on) unless a 7460-1 determination letter is issued for such equipment.
- 2.23.1.2 No use of open flame welding or torches unless fire safety precautions are provided and the airport operator has approved their use.
- 2.23.1.3 No use of electrical blasting caps on or within 1,000 feet (300 meters) of the airport property. See AC 150/5370-10.

2.23.2 Restrictions.

- 2.23.2.1 Construction suspension required during specific airport operations.
- 2.23.2.2 Areas that cannot be worked on simultaneously.
- 2.23.2.3 Day or night construction restrictions.
- 2.23.2.4 Seasonal construction restrictions.
- 2.23.2.5 Temporary signs not approved by the airport operator.
- 2.23.2.6 Grades changes that could result in unplanned effects on NAVAIDs.

CHAPTER 3. GUIDELINES FOR WRITING A CSPP

3.1 General Requirements.

The CSPP is a standalone document written to correspond with the subjects outlined in paragraph 2.4. The CSPP is organized by numbered sections corresponding to each subject listed in paragraph 2.4, and described in detail in paragraphs 2.5 - 2.23. Each section number and title in the CSPP matches the corresponding subject outlined in paragraph 2.4 (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.

3.2 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 ILS cables during trenching operations could be considered FAA ATO coordination (Coordination, paragraph 2.5.3), an area and operation affected by the construction activity (Areas and Operations Affected by the Construction Activity, paragraph 2.7.1.4), a protection of a NAVAID (Protection of Navigational Aids (NAVAIDs), paragraph 2.8), or a notification to the FAA of construction activities (Notification of Construction Activities, paragraph 2.13.5.3.2). However, it is more specifically an underground utility requirement (Underground Utilities, paragraph 2.15). The procedure for protecting underground ILS cables during trenching operations should therefore be described in 2.4.2.11: “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 2.4.2.11: “ILS cables shall be identified and protected as described in 2.4.2.11” or “See 2.4.2.11 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.

3.3 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.

3.4 **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. Where this AC recommends references (e.g. as in paragraph 3.9) the intent is to include a reference to the corresponding section in the CSPP, not to this Advisory Circular.

3.5 **Restrictions.**

The CSPP should not be considered as a project design review document. The CSPP should 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.

3.6 **Coordination.**

Include in this section a detailed description of conferences and meetings to be held both before and during the project. Include appropriate information from AC 150/5370-12. Discuss coordination procedures and schedules for each required FAA ATO Technical Operations shutdown and restart and all required flight inspections.

3.7 **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 the proposed construction. Include a reference to paragraph 3.8, as appropriate.

3.8 **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. See Appendix F for sample operational effects tables and figures.

3.9 **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 3.6 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 3.14 for the

issuance of NOTAMs as required. Include a reference to paragraph 3.16 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 3.19. Attach drawings to graphically indicate the affected NAVAIDs and the corresponding critical areas.

3.10 **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:

3.10.1 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 3.21 for hazard marking and lighting devices used to identify stockpiles. Include a reference to paragraph 3.11 for provisions to prevent stockpile material from becoming wildlife attractants. Include a reference to paragraph 3.12 for provisions to prevent stockpile material from becoming FOD. Attach drawings to graphically indicate the stockpile locations.

3.10.2 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 and 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 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.

3.10.3 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 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).

3.10.4 **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.

3.11 **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 3.10 for security (wildlife) fence integrity maintenance as required.

3.12 **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 3.15 for inspection requirements as required.

3.13 **HAZMAT Management.**

Describe in this section HAZMAT management procedures: fuel deliveries, spill recovery procedures, Safety Data Sheet (SDS), Material Safety Data Sheet (MSDS) or Product Safety Data Sheet (PSDS) availability, and other considerations. Any specific airport HAZMAT restrictions should also be identified. Include a reference to paragraph 3.10 for HAZMAT vehicle identification requirements. Quote from, rather than incorporate by reference, AC 150/5320-15.

3.14 **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 all representatives of all parties potentially impacted by the 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. Identify the E911 address of the airport and the emergency access route via haul roads to the construction site. Require the contractor to have this information available to all workers. 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 3.10. 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.

3.15 Inspection Requirements.

Describe in this section inspection requirements to ensure airfield safety compliance. Include a requirement for routine inspections by the resident engineer (RE) or other airport operator's representative 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.

3.16 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 3.14 for notification of utility owners of accidental utility disruption as required.

3.17 Penalties.

Describe in this section specific penalties imposed for noncompliance with airport rules and regulations, including the CSPP: SIDA violations, VPD, and others.

3.18 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 3.10 for compliance with airport safety and security measures and for radio communications as required. Include

a reference to paragraph 3.14 for emergency notification of all involved parties, including police/security, ARFF, and medical services.

3.19 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.

3.20 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 MUTCD and/or State highway specifications, not hand lettered. Detail any modifications to the guidance in the MUTCD necessary to meet frangibility/height requirements.

3.21 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 3.14. Attach drawings to graphically indicate the placement of hazard marking and lighting equipment.

3.22 Work Zone Lighting for Nighttime Construction.

If work is to be conducted at night, specify all lighting equipment, including when and where each type of device is to be used. Indicate the direction lights are to be aimed and any directions that aiming of lights is prohibited. Specify any shielding necessary in instances where aiming is not sufficient to prevent interference with air traffic control and aircraft operations. Attach drawings to graphically indicate the placement and aiming of lighting equipment. Where the plan only indicates directions that aiming of lights is prohibited, the placement and positioning of portable lights must be proposed by the Contractor and approved by the airport operator's representative each time lights are relocated or repositioned.

3.23 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, as required. Include a reference to paragraph 3.10 for procedures regarding vehicle and personnel movement within safety areas. Include a reference to paragraph 3.10 for material stockpile restrictions as required. Detail requirements for trenching, excavations, and backfill. Include a reference to paragraph 3.21 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 the required Runway Safety Area, include a reference to paragraphs 3.14 and 3.19. 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, as required. Include a reference to paragraph 3.24 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.

3.24 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 3.7 for project phasing requirements based on construction limitations as required.

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APPENDIX A. 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/>.

Table A-1. FAA Publications

Number	Title and Description
<u>AC 150/5200-28</u>	<i>Notices to Airmen (NOTAMs) for Airport Operators</i> Guidance for using the NOTAM System in airport reporting.
<u>AC 150/5200-30</u>	<i>Airport Field Condition Assessments and Winter Operations Safety</i> Guidance for airport owners/operators on the development of an acceptable airport snow and ice control program and on appropriate field condition reporting procedures.
<u>AC 150/5200-33</u>	<i>Hazardous Wildlife Attractants On or Near Airports</i> Guidance on locating certain land uses that might attract hazardous wildlife to public-use airports.
<u>AC 150/5210-5</u>	<i>Painting, Marking, and Lighting of Vehicles Used on an Airport</i> Guidance, specifications, and standards for painting, marking, and lighting vehicles operating in the airport air operations areas.
<u>AC 150/5210-20</u>	<i>Ground Vehicle Operations to include Taxiing or Towing an Aircraft on Airports</i> Guidance to airport operators on developing ground vehicle operation training programs.
<u>AC 150/5300-13</u>	<i>Airport Design</i> 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.
<u>AC 150/5210-24</u>	<i>Airport Foreign Object Debris (FOD) Management</i> Guidance for developing and managing an airport foreign object debris (FOD) program

Number	Title and Description
<u>AC 150/5320-15</u>	<i>Management of Airport Industrial Waste</i> 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.
<u>AC 150/5340-1</u>	<i>Standards for Airport Markings</i> FAA standards for the siting and installation of signs on airport runways and taxiways.
<u>AC 150/5340-18</u>	<i>Standards for Airport Sign Systems</i> FAA standards for the siting and installation of signs on airport runways and taxiways.
<u>AC 150/5345-28</u>	<i>Precision Approach Path Indicator (PAPI) Systems</i> FAA standards for PAPI systems, which provide pilots with visual glide slope guidance during approach for landing.
<u>AC 150/5340-30</u>	<i>Design and Installation Details for Airport Visual Aids</i> Guidance and recommendations on the installation of airport visual aids.
<u>AC 150/5345-39</u>	<i>Specification for L-853, Runway and Taxiway Retroreflective Markers</i>
<u>AC 150/5345-44</u>	<i>Specification for Runway and Taxiway Signs</i> FAA specifications for unlighted and lighted signs for taxiways and runways.
<u>AC 150/5345-53</u>	<i>Airport Lighting Equipment Certification Program</i> Details on the Airport Lighting Equipment Certification Program (ALECP).
<u>AC 150/5345-50</u>	<i>Specification for Portable Runway and Taxiway Lights</i> 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.
<u>AC 150/5345-55</u>	<i>Specification for L-893, Lighted Visual Aid to Indicate Temporary Runway Closure</i>

Number	Title and Description
<u>AC 150/5370-10</u>	<i>Standards for Specifying Construction of Airports</i> Standards for construction of airports, including earthwork, drainage, paving, turfing, lighting, and incidental construction.
<u>AC 150/5370-12</u>	<i>Quality Management for Federally Funded Airport Construction Projects</i>
EB 93	<i>Guidance for the Assembly and Installation of Temporary Orange Construction Signs</i>
FAA Order 5200.11	<u>FAA Airports (ARP) Safety Management System (SMS)</u> 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	<i>Grasses Attractive to Hazardous Wildlife</i> Guidance on grass management and seed selection.
FAA Form 7460-1	<u>Notice of Proposed Construction or Alteration</u>
FAA Form 7480-1	<u>Notice of Landing Area Proposal</u>
FAA Form 6000.26	National NAS Strategic Interruption Service Level Agreement, Strategic Events Coordination, Airport Sponsor Form

Obtain the latest version of the following free publications from the Electronic Code of Federal Regulations at <http://www.ecfr.gov/>.

Table A-2. Code of Federal Regulation

Number	Title
Title 14 CFR Part 77	Safe, Efficient Use and Preservation of the Navigable Airspace
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/>.

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APPENDIX B. TERMS AND ACRONYMS**Table B-1. Terms and Acronyms**

Term	Definition
Form 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, <i>Safe, Efficient Use, and Preservation of the Navigable Airspace</i> . (See guidance available on the FAA web site at https://oeaaa.faa.gov .) The form may be downloaded at http://www.faa.gov/airports/resources/forms/ , or filed electronically at: https://oeaaa.faa.gov .
Form 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/ .
Form 6000-26	Airport Sponsor Strategic Event Submission Form
AC	Advisory Circular
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, as defined in 14 CFR Part 107. Means a portion of an airport, specified in the airport security program, in which security measures are carried out. This area includes aircraft movement areas, aircraft parking areas, loading ramps, and safety areas, and any adjacent areas (such as general aviation areas) that are not separated by adequate security systems, measures, or procedures. This area does not include the secured area of the airport terminal building.
ARFF	Aircraft Rescue and Fire Fighting
ARP	FAA Office of Airports
ASDA	Accelerate-Stop Distance Available
AT	Air Traffic
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

Term	Definition
	the authority of 14 CFR Part 139, <i>Certification of Airports</i> .
CFR	Code of Federal Regulations
Construction	The presence 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.
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
FAA	Federal Aviation Administration
FOD	Foreign Object Debris/Damage
FSS	Flight Service Station
GA	General Aviation
HAZMAT	Hazardous Materials
HMA	Hot Mix Asphalt
IAP	Instrument Approach Procedures
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.

Term	Definition
NOTAM	Notices to Airmen
Obstruction	Any object/obstacle exceeding the obstruction standards specified by 14 CFR Part 77, subpart C.
OCC	Operations Control Center
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 <u>AC 150/5300-13</u> 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 <u>AC 150/5300-13</u> for guidance on OFZ.
OSHA	Occupational Safety and Health Administration
OTS	Out of Service
P&R	Planning and Requirements Group
NPI	NAS Planning & Integration
PAPI	Precision Approach Path Indicator
PFC	Passenger Facility Charge
PLASI	Pulse Light Approach Slope Indicator
Project Proposal Summary	A clear and concise description of the proposed project or change that is the object of Safety Risk Management.
RA	Reimbursable Agreement
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 <u>AC 150/5300-13</u> .
SDS	Safety Data Sheet
SIDA	Security Identification Display Area
SMS	Safety Management System

Term	Definition
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
SSC	System Support Center
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 <u>AC 150/5300-13</u> .
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 <u>AC 150/5300-13</u> for guidance on declared distances.
TSA	Taxiway Safety Area, or Transportation Security Administration
UNICOM	A radio communications system of a type used at small airports.
VASI	Visual Approach Slope Indicator
VGSI	Visual Glide Slope Indicator. A device that provides a visual glide slope indicator to landing pilots. These systems include precision approach path indicator (PAPI), visual approach slope indicator (VASI), and pulse light approach slope indicator (PLASI).
VFR	Visual Flight Rules
VOR	Very High Frequency Omnidirectional Radio Range
VPD	Vehicle / Pedestrian Deviation

APPENDIX C. SAFETY AND PHASING PLAN CHECKLIST

This appendix is keyed to Chapter 2. 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 a required submittal.

Table C-1. CSPP Checklist

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
General Considerations					
Requirements for predesign, prebid, and preconstruction conferences to introduce the subject of airport operational safety during construction are specified.	<u>2.5</u>				
Operational safety is a standing agenda item for construction progress meetings.	<u>2.5</u>				
Scheduling of the construction phases is properly addressed.	<u>2.6</u>				
Any formal agreements are established.	<u>2.5.3</u>				
Areas and Operations Affected by Construction Activity					
Drawings showing affected areas are included.	<u>2.7.1</u>				
Closed or partially closed runways, taxiways, and aprons are depicted on drawings.	<u>2.7.1.1</u>				
Access routes used by ARFF vehicles affected by the project are addressed.	<u>2.7.1.2</u>				
Access routes used by airport and airline support vehicles affected by the project are addressed.	<u>2.7.1.3</u>				
Underground utilities, including water supplies for firefighting and drainage.	<u>2.7.1.4</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Approach/departure surfaces affected by heights of temporary objects are addressed.	<u>2.7.1.5</u>				
Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads are properly depicted on drawings.	<u>2.7.1</u>				
Temporary changes to taxi operations are addressed.	<u>2.7.2.1</u>				
Detours for ARFF and other airport vehicles are identified.	<u>2.7.2.2</u>				
Maintenance of essential utilities and underground infrastructure is addressed.	<u>2.7.2.3</u>				
Temporary changes to air traffic control procedures are addressed.	<u>2.7.2.4</u>				
NAVAIDs					
Critical areas for NAVAIDs are depicted on drawings.	<u>2.8</u>				
Effects of construction activity on the performance of NAVAIDS, including unanticipated power outages, are addressed.	<u>2.8</u>				
Protection of NAVAID facilities is addressed.	<u>2.8</u>				
The required distance and direction from each NAVAID to any construction activity is depicted on drawings.	<u>2.8</u>				
Procedures for coordination with FAA ATO/Technical Operations, including identification of points of contact, are included.	<u>2.8, 2.13.1, 2.13.5.3.1, 2.18.1</u>				
Contractor Access					
The CSPP addresses areas to which contractor will have access and how	<u>2.9</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
the areas will be accessed.					
The application of 49 CFR Part 1542 Airport Security, where appropriate, is addressed.	<u>2.9</u>				
The location of stockpiled construction materials is depicted on drawings.	<u>2.9.1</u>				
The requirement for stockpiles in the ROFA to be approved by FAA is included.	<u>2.9.1</u>				
Requirements for proper stockpiling of materials are included.	<u>2.9.1</u>				
Construction site parking is addressed.	<u>2.9.2.1</u>				
Construction equipment parking is addressed.	<u>2.9.2.2</u>				
Access and haul roads are addressed.	<u>2.9.2.3</u>				
A requirement for marking and lighting of vehicles to comply with <i>AC 150/5210-5, Painting, Marking and Lighting of Vehicles Used on an Airport</i> , is included.	<u>2.9.2.4</u>				
Proper vehicle operations, including requirements for escorts, are described.	<u>2.9.2.5, 2.9.2.6</u>				
Training requirements for vehicle drivers are addressed.	<u>2.9.2.7</u>				
Two-way radio communications procedures are described.	<u>2.9.2.9</u>				
Maintenance of the secured area of the airport is addressed.	<u>2.9.2.10</u>				
Wildlife Management					
The airport operator's wildlife management procedures are addressed.	<u>2.10</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Foreign Object Debris Management					
The airport operator’s FOD management procedures are addressed.	<u>2.11</u>				
Hazardous Materials Management					
The airport operator’s hazardous materials management procedures are addressed.	<u>2.12</u>				
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.	<u>2.13</u>				
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.	<u>2.13.1</u>				
A list of local ATO/Technical Operations personnel is included.	<u>2.13.1</u>				
A list of ATCT managers on duty is included.	<u>2.13.1</u>				
A list of authorized representatives to the OCC is included.	<u>2.13.2</u>				
Procedures for coordinating, issuing, maintaining and cancelling by the airport operator of NOTAMS about airport conditions resulting from construction are included.	<u>2.8, 2.13.2, 2.18.3.3.9</u>				
Provision of information on closed or hazardous conditions on airport movement areas by the airport operator to the OCC is specified.	<u>2.13.2</u>				
Emergency notification procedures for medical, fire fighting, and police	<u>2.13.3</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
response are addressed.					
Coordination with ARFF personnel for non-emergency issues is addressed.	<u>2.13.4</u>				
Notification to the FAA under 14 CFR parts 77 and 157 is addressed.	<u>2.13.5</u>				
Reimbursable agreements for flight checks and/or design and construction for FAA owned NAVAIDs are addressed.	<u>2.13.5.3.2</u>				
Inspection Requirements					
Daily and interim inspections by both the airport operator and contractor are specified.	<u>2.14.1, 2.14.2</u>				
Final inspections at certificated airports are specified when required.	<u>2.14.3</u>				
Underground Utilities					
Procedures for protecting existing underground facilities in excavation areas are described.	<u>2.15</u>				
Penalties					
Penalty provisions for noncompliance with airport rules and regulations and the safety plans are detailed.	<u>2.16</u>				
Special Conditions					
Any special conditions that affect the operation of the airport or require the activation of any special procedures are addressed.	<u>2.17</u>				
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.	<u>2.18.1</u>				
Frangibility of airport markings, lighting, signs, and visual NAVAIDs is specified.	<u>2.18.1, 2.18.3, 2.18.4.2, 2.20.2.4</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
The requirement for markings to be in compliance with <u>AC 150/5340-1</u> , <i>Standards for Airport Markings</i> , is specified.	<u>2.18.2</u>				
Detailed specifications for materials and methods for temporary markings are provided.	<u>2.18.2</u>				
The requirement for lighting to conform to <u>AC 150/5340-30</u> , <i>Design and Installation Details for Airport Visual Aids</i> ; <u>AC 150/5345-50</u> , <i>Specification for Portable Runway and Taxiway Lights</i> ; and <u>AC 150/5345-53</u> , <i>Airport Lighting Certification Program</i> , is specified.	<u>2.18.3</u>				
The use of a lighted X is specified where appropriate.	<u>2.18.2.1.2</u> , <u>2.18.3.2</u>				
The requirement for signs to conform to <u>AC 150/5345-44</u> , <i>Specification for Runway and Taxiway Signs</i> ; <u>AC 150/5340-18</u> , <i>Standards for Airport Sign Systems</i> ; and <u>AC 150/5345-53</u> , <i>Airport Lighting Certification Program</i> , is specified.	<u>2.18.4</u>				
Marking and Signs For Access Routes					
The CSPP specifies that pavement markings and signs intended for construction personnel should conform to <u>AC 150/5340-18</u> and, to the extent practicable, with the MUTCD and/or State highway specifications.	<u>2.18.4.2</u>				
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.	<u>2.20.1</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Hazard marking and lighting are specified to identify open manholes, small areas under repair, stockpiled material, and waste areas.	<u>2.20.1</u>				
The CSPP considers less obvious construction-related hazards.	<u>2.20.1</u>				
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.	<u>2.20.2.1</u>				
The spacing of barricades is specified such that a breach is physically prevented barring a deliberate act.	<u>2.20.2.1</u>				
Red lights meeting the luminance requirements of the State Highway Department are specified.	<u>2.20.2.2</u>				
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 inch high.	<u>2.20.2.3</u>				
Barricades are specified to indicate construction locations in which no part of an aircraft may enter.	<u>2.20.2.3</u>				
Highly reflective barriers with lights are specified to barricade taxiways leading to closed runways.	<u>2.20.2.5</u>				
Markings for temporary closures are specified.	<u>2.20.2.5</u>				
The provision of a contractor's representative on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades is specified.	<u>2.20.2.7</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Work Zone Lighting for Nighttime Construction					
If work is to be conducted at night, the CSPP identifies construction lighting units and their general locations and aiming in relationship to the ATCT and active runways and taxiways.	<u>2.21</u>				
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.	<u>2.22.1.1,</u> <u>2.22.3.1</u>				
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.	<u>2.22.1.2,</u> <u>2.22.3.2</u>				
Procedures for ensuring adequate distance for protection from blasting operations, if required by operational considerations, are detailed.	<u>2.22.3.3</u>				
The CSPP specifies that open trenches or excavations are not permitted within a safety area while the associated runway or taxiway is open, subject to approved exceptions.	<u>2.22.1.4</u>				
Appropriate covering of excavations in the RSA or TSA that cannot be backfilled before the associated runway or taxiway is open is detailed.	<u>2.22.1.4</u>				
The CSPP includes provisions for prominent marking of open trenches and excavations at the construction site.	<u>2.22.1.4</u>				
Grading and soil erosion control to maintain RSA/TSA standards are	<u>2.22.3.5</u>				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
addressed.					
The CSPP specifies that equipment is to be removed from the ROFA when not in use.	<u>2.22.2</u>				
The CSPP clearly states that no construction may occur within a taxiway safety area while the taxiway is open for aircraft operations.	<u>2.22.3</u>				
Appropriate details are specified for any construction work to be accomplished in a taxiway object free area.	<u>2.22.4</u>				
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.	<u>2.22.4.3.6</u>				
Provisions for protection of runway approach/departure areas and clearways are included.	<u>2.22.6</u>				
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.	<u>2.23.1.2</u>				
The CSPP prohibits the use of electrical blasting caps on or within 1,000 ft (300 m) of the airport property.	<u>2.23.1.3</u>				

APPENDIX D. 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 including information such as the date, time and name of the person conducting the inspection.

Table D-1. Potentially Hazardous Conditions

Item	Action Required (Describe)	No Action Required (Check)
Excavation adjacent to runways, taxiways, and aprons improperly backfilled.		
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.		
Runway resurfacing projects resulting in lips exceeding 3 inch (7.6 cm) from pavement edges and ends.		
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.		
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.		
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		

Item	Action Required (Describe)	No Action Required (Check)
approach zones.		
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.		
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.		
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.		
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.		
Wildlife attractants — such as trash (food scraps not collected from construction personnel activity), grass seeds, tall grass, or standing water — on or near airports.		
Obliterated or faded temporary markings on active operational areas.		
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the approach to any open runway pose aviation hazards.		

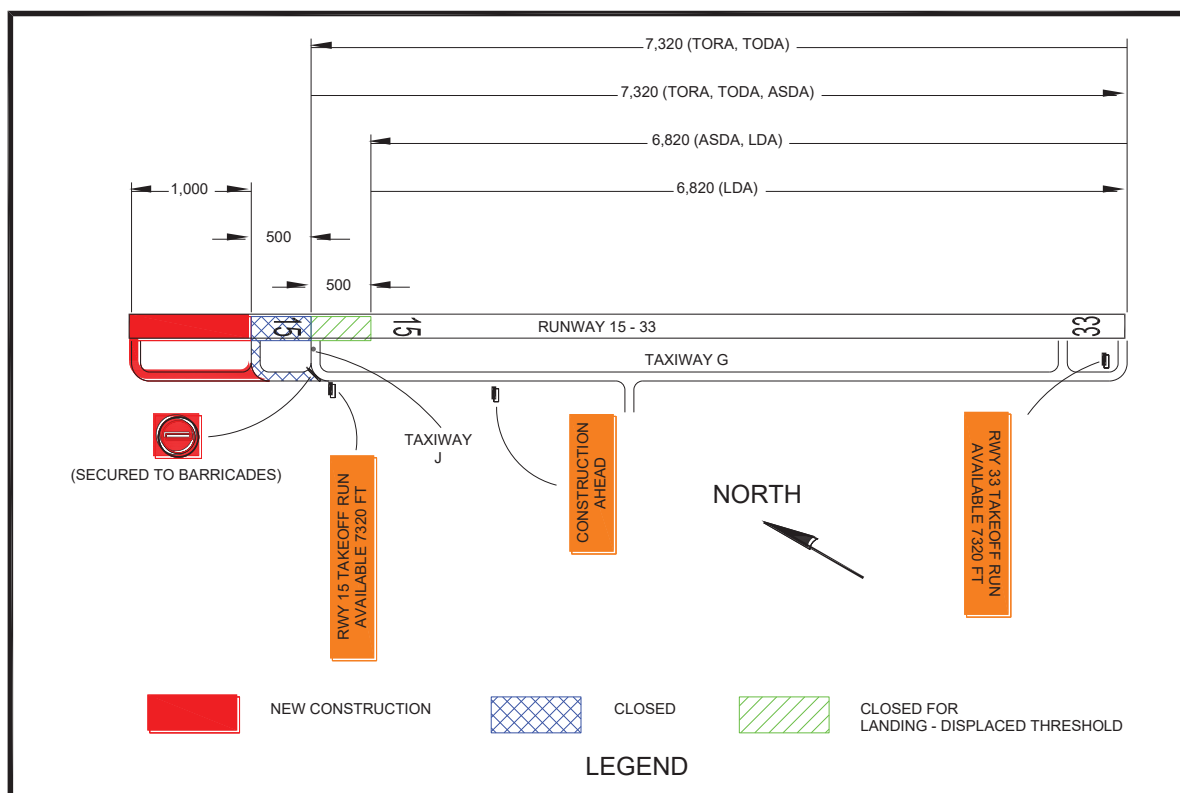
Item	Action Required (Describe)	No Action Required (Check)
Failure to issue, update, or cancel NOTAMs about airport or runway closures or other construction related airport conditions.		
Failure to mark and identify utilities or power cables. Damage to utilities and power cables during construction activity 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.		
Restrictions on ARFF access from fire stations to the runway / taxiway system or airport buildings.		
Lack of radio communications with construction vehicles in airport movement areas.		
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.		
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.		
Spillage from vehicles (gasoline, diesel fuel, oil) on active pavement areas, such as runways, taxiways, aprons, and airport roadways.		
Failure to maintain drainage system integrity during construction (for example, no temporary drainage provided when working on a drainage system).		

Item	Action Required (Describe)	No Action Required (Check)
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.		
Failure to control dust. Consider limiting the amount of area from which the contractor is allowed to strip turf.		
Exposed wiring that creates an electrocution or fire ignition hazard. Identify and secure wiring, and place it in conduit or bury it.		
Site burning, which can cause possible obscuration.		
Construction work taking place outside of designated work areas and out of phase.		

APPENDIX E. SAMPLE OPERATIONAL EFFECTS TABLE**E.1 Project Description.**

Runway 15-33 is currently 7820 feet long, with a 500 foot stopway on the north end. This project will remove the stopway and extend the runway 1000 feet to the north and 500 feet to the south. Finally, the existing portion of the runway will be repaved. The runway 33 glide slope will be relocated. The new runway 33 localizer has already been installed by FAA Technical Operations and only needs to be switched on. Runway 15 is currently served only by a localizer, which will remain in operation as it will be beyond the future RSA. Appropriate NOTAMS will be issued throughout the project.

- E.1.1 During Phase I, the runway 15 threshold will be displaced 1000 feet to keep construction equipment below the approach surface. The start of runway 15 takeoff and the departure end of runway 33 will also be moved 500 feet to protect workers from jet blast. Declared distances for runway 33 will be adjusted to provide the required RSA and applicable departure surface. Excavation near Taxiway G will require its ADG to be reduced from IV to III. See [Figure E-1](#).

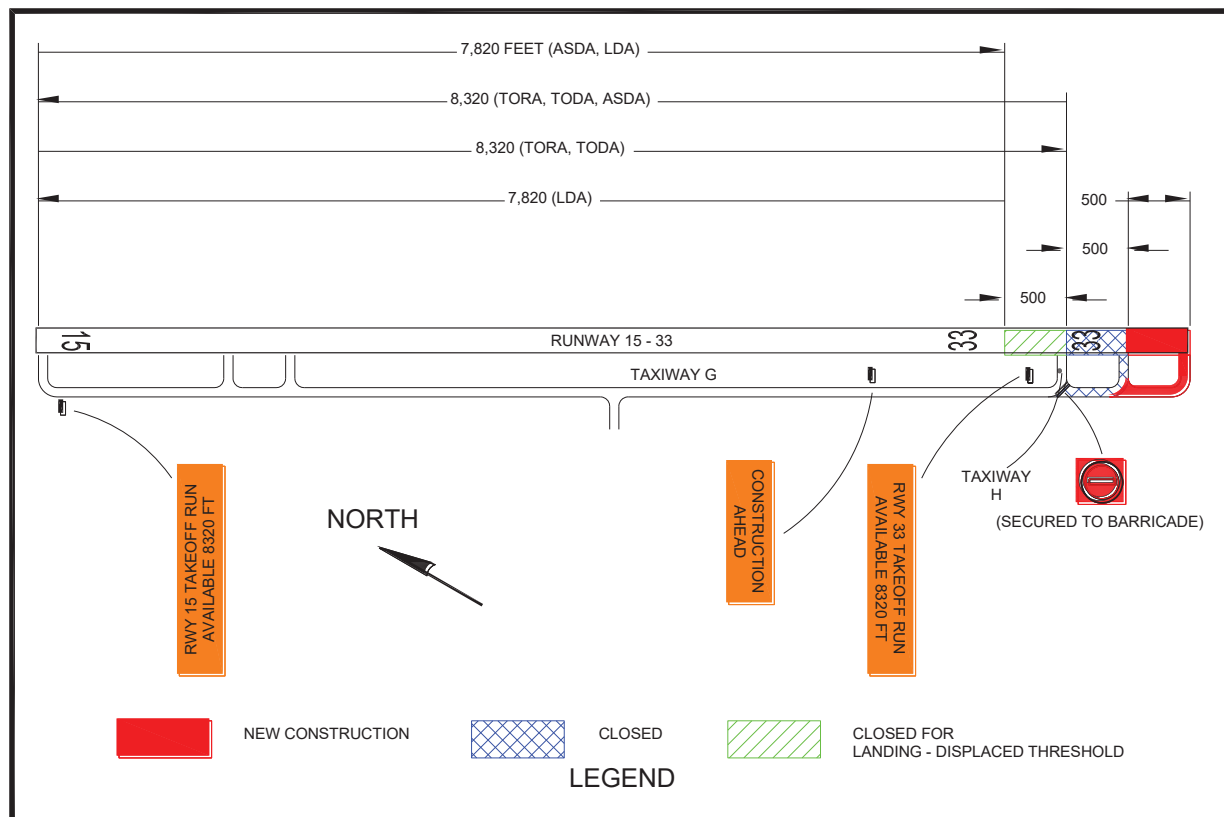
Figure E-1. Phase I Example

Note 1: Where hold signs are installed on both sides of a taxiway, install the TORA sign on the left side of the taxiway before the final turn to the runway intersection.

Note 2: Based on the declared distances for Runway 33 departures, the maximum equipment height in the construction area is 12.5 feet ($500/40 = 12.5$).

- E.2 During Phase II, the runway 33 threshold will be displaced 1000 feet to keep construction equipment below the approach surface. The start of runway 33 takeoff and the departure end of runway 15 will also be moved 500 feet to protect workers from jet blast. Declared distances for runway 15 will be adjusted to provide the required RSA and applicable departure surface. See Figure E-2.

Figure E-2. Phase II Example



Note 1: Where hold signs are installed on both sides of a taxiway, install the TORA sign on the left side of the taxiway before the final turn to the runway intersection.

Note 2: Based on the declared distances for Runway 15 departures, the maximum equipment height in the construction area is 12.5 feet ($500/40 = 12.5$).

- E.3 During Phase III, the existing portion of the runway will be repaved with Hot Mix Asphalt (HMA) and the runway 33 glide slope will be relocated. Construction will be accomplished between the hours of 8:00 pm and 5:00 am, during which the runway will be closed to operations.

Figure E-3. Phase III Example

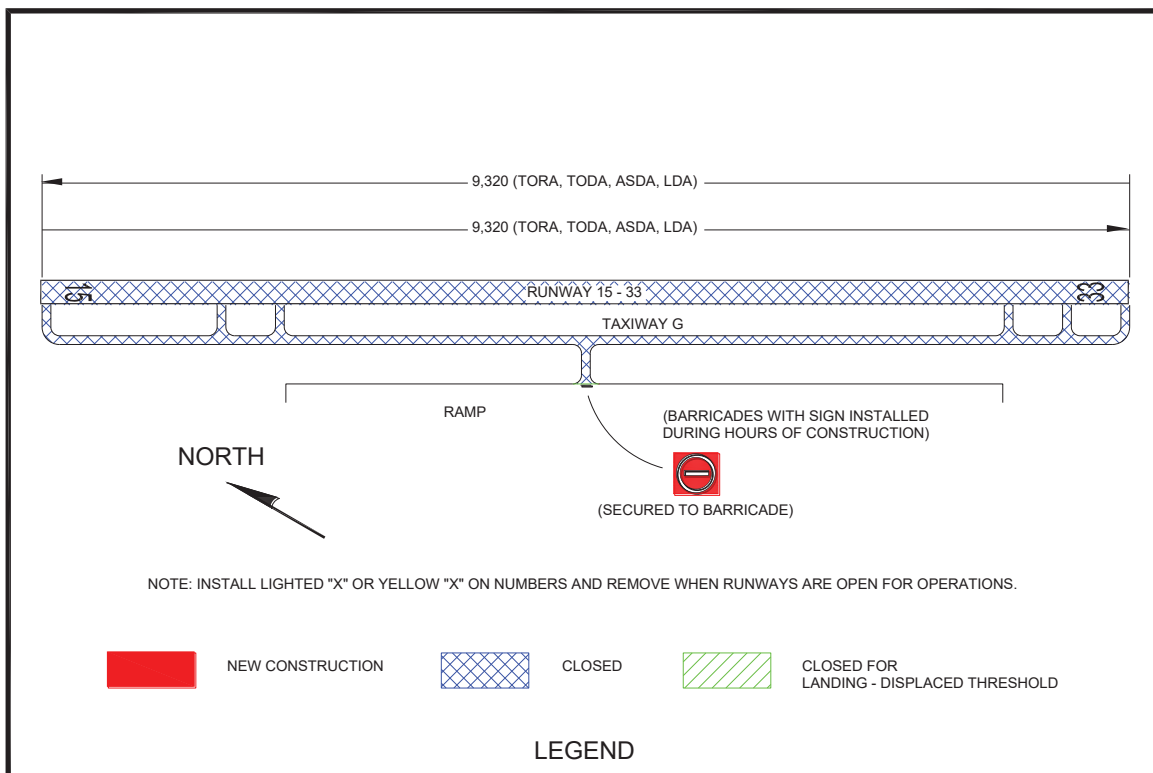


Table E-1. Operational Effects Table

Project	Runway 15-33 Extension and Repaving			
Phase	Normal (Existing)	Phase I: Extend Runway 15 End	Phase II: Extend Runway 33 End	Phase III: Repave Runway
Scope of Work	N/A	Extend Runway 15-33 1,000 ft on north end with Hot Mix Asphaltic Concrete (HMA).	Extend Runway 15-33 500 ft on south end with Hot Mix Asphaltic Concrete (HMA).	Repave existing runway with HMA Relocate Runway 33 Glide Slope
Effects of Construction Operations	N/A	Existing North 500 ft closed	Existing South 500 ft closed	Runway closed between 8:00 pm and 5:00 am Edge lighting out of service
Construction Phase	N/A	Phase I (Anticipated)	Phase II (Anticipated)	Phase III (Anticipated)
Runway 15 Average Aircraft Operations	Carrier: 52 /day GA: 26 /day Military: 11 /day	Carrier: 40 /day GA: 26 /day Military: 0 /day	Carrier: 45 /day GA: 26 /day Military: 5 /day	Carrier: 45 / day GA: 20 / day Military: 0 /day
Runway 33 Average Aircraft Operations	Carrier: 40 /day GA: 18 /day Military: 10 /day	Carrier: 30 /day GA: 18 /day Military: 0 /day	Carrier: 25 /day GA: 18 /day Military: 5 /day	Carrier: 20 /day GA: 5 /day Military: 0 /day
Runway 15-33 Aircraft Category	C-IV	C-IV	C-IV	C-IV
Runway 15 Approach Visibility Minimums	1 mile	1 mile	1 mile	1 mile
Runway 33 Approach Visibility Minimums	$\frac{3}{4}$ mile	$\frac{3}{4}$ mile	$\frac{3}{4}$ mile	1 mile

Note: Proper coordination with Flight Procedures group is necessary to maintain instrument approach procedures during construction.

Project		Runway 15-33 Extension and Repaving			
Phase		Normal (Existing)	Phase I: Extend Runway 15 End	Phase II: Extend Runway 33 End	Phase III: Repave Runway
Runway 15 Declared Distances	TORA	7,820	7,320	8,320	9,320
	TODA	7,820	7,320	8,320	9,320
	ASDA	7,820	7,320	7,820	9,320
	LDA	7,820	6,820	7,820	9,320
Runway 33 Declared Distances	TORA	7,820	7,320	8,320	9,320
	TODA	7,820	7,320	8,320	9,320
	ASDA	8,320	6,820	8,320	9,320
	LDA	7,820	6,820	7,820	9,320
Runway 15 Approach Procedures		LOC only	LOC only	LOC only	LOC only
		RNAV	RNAV	RNAV	RNAV
		VOR	VOR	VOR	VOR
Runway 33 Approach Procedures		ILS	ILS	ILS	LOC only
		RNAV	RNAV	RNAV	RNAV
		VOR	VOR	VOR	VOR
Runway 15 NAVAIDs		LOC	LOC	LOC	LOC
Runway 33 NAVAIDs		ILS, MALSR	ILS, MALSR	ILS, MALSR	LOC, MALSR
Taxiway G ADG		IV	III	IV	IV
Taxiway G TDG		4	4	4	4
ATCT (hours open)		24 hours	24 hours	24 hours	0500 - 2000
ARFF Index		D	D	D	D

Project	Runway 15-33 Extension and Repaving			
Phase	Normal (Existing)	Phase I: Extend Runway 15 End	Phase II: Extend Runway 33 End	Phase III: Repave Runway
Special Conditions	Air National Guard (ANG) military operations	All military aircraft relocated to alternate ANG Base	Some large military aircraft relocated to alternate ANG Base	All military aircraft relocated to alternate ANG Base
Information for NOTAMs		Refer above for applicable declared distances. Taxiway G limited to 118 ft wingspan	Refer above for applicable declared distances.	Refer above for applicable declared distances. Airport closed 2000 – 0500. Runway 15 glide slope OTS.

Note: This table is one example. It may be advantageous to develop a separate table for each project phase and/or to address the operational status of the associated NAVAIDs per construction phase.

Complete the following chart for each phase to determine the area that must be protected along the runway and taxiway edges:

Table E-2. Runway and Taxiway Edge Protection

Runway/Taxiway	Aircraft Approach Category* A, B, C, or D	Airplane Design Group* I, II, III, or IV	Safety Area Width in Feet Divided by 2*

*See AC 150/5300-13 to complete the chart for a specific runway/taxiway.

Complete the following chart for each phase to determine the area that must be protected before the runway threshold:

Table E-3. Protection Prior to 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	: 1
				ft	: 1
				ft	: 1
				ft	: 1

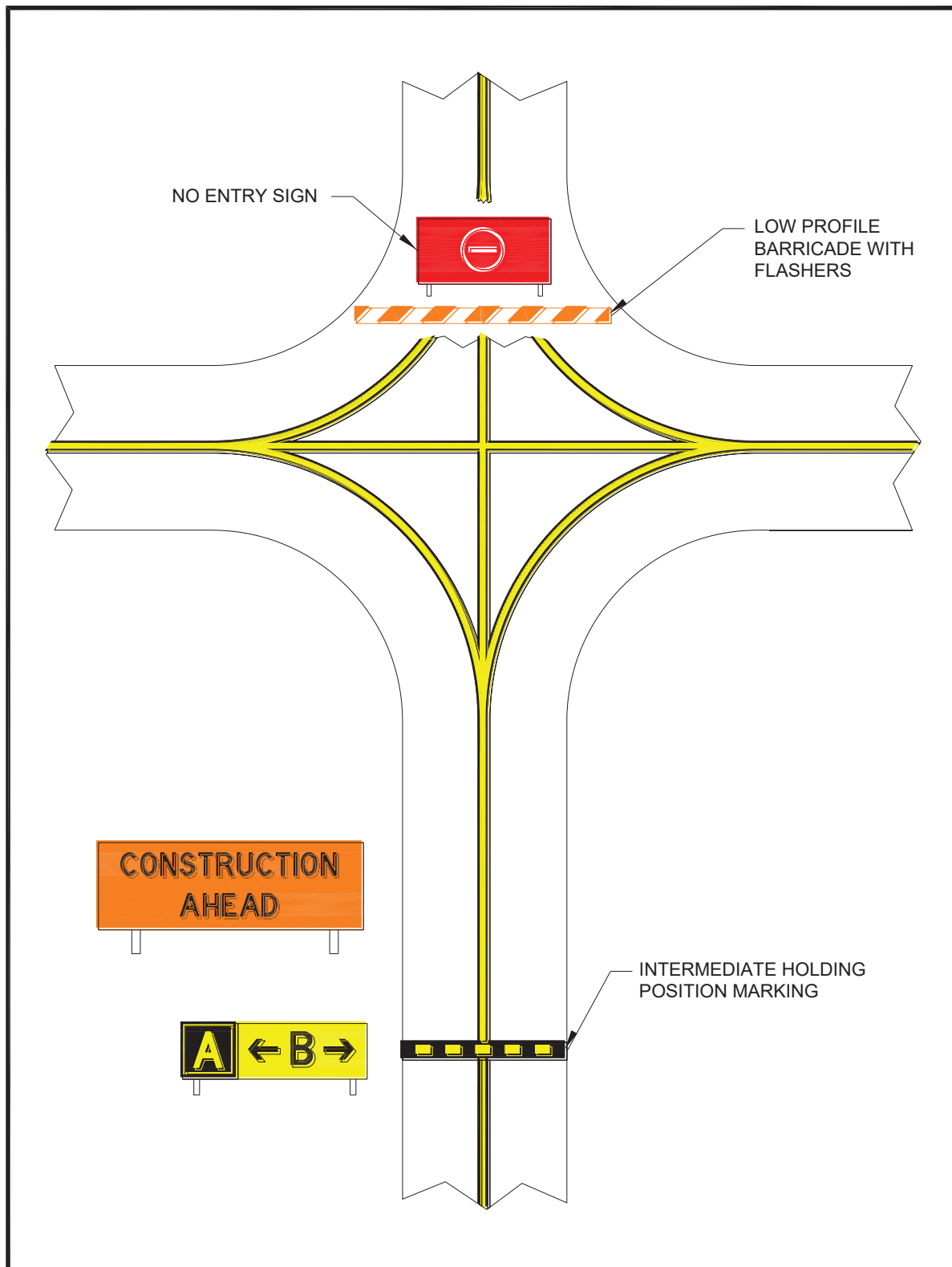
*See AC 150/5300-13 to complete the chart for a specific runway.

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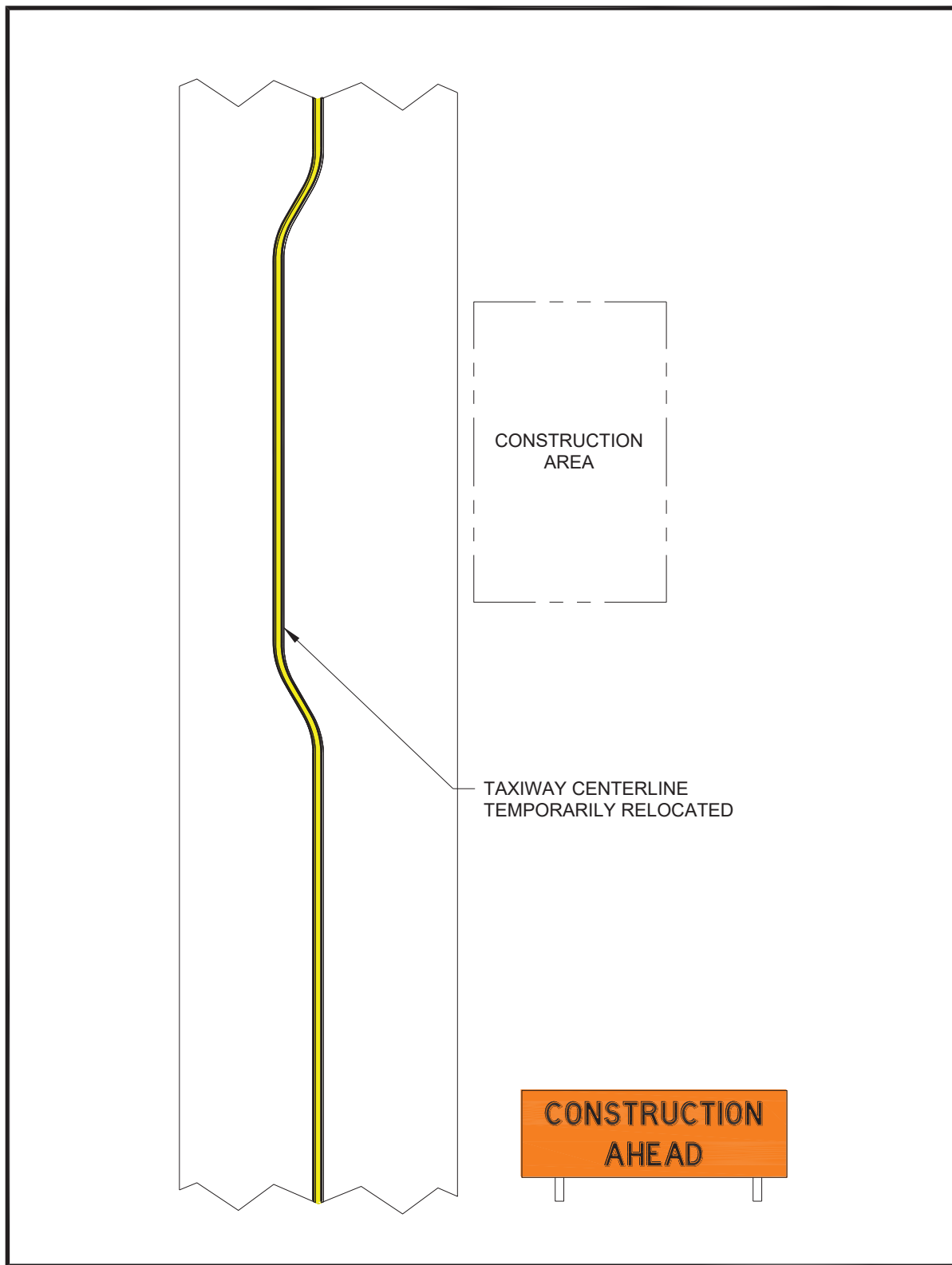
APPENDIX F. ORANGE CONSTRUCTION SIGNS

Figure F-1. Approved Sign Legends



Figure F-2. Orange Construction Sign Example 1

Note: For proper placement of signs, refer to EB 93.

Figure F-3. Orange Construction Sign Example 2

Note: For proper placement of signs, refer to EB 93.

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Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by (1) mailing this form to Manager, Airport Engineering Division, Federal Aviation Administration ATTN: AAS-100, 800 Independence Avenue SW, Washington DC 20591 or (2) faxing it to the attention of the Office of Airport Safety and Standards at (202) 267-5383.

Subject: AC 150/5370-2G

Date: _____

Please check all appropriate line items:

- ☐ An error (procedural or typographical) has been noted in paragraph _____ on page _____.
- ☐ Recommend paragraph _____ on page _____ be changed as follows:
- _____
- _____
- _____
- ☐ In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)
- _____
- _____
- _____
- ☐ Other comments:
- _____
- _____
- _____
- ☐ I would like to discuss the above. Please contact me at (phone number, email address).
- _____

Submitted by: _____

Date: _____

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U.S. Department
of Transportation

**Federal Aviation
Administration**

Advisory Circular

Subject: Guidelines and Procedures for Maintenance of Airport Pavements	Date: 10/10/2014 Initiated by: AAS-100	AC No: 150/5380-6C Change:

1. Purpose. This advisory circular (AC) provides guidelines and procedures for maintaining airport pavements.

2. Cancellation. This AC cancels AC 150/5380-6B, Guidelines and Procedures for Maintenance of Airport Pavements, dated September 28, 2007.

3. Application. The guidelines and procedures contained in this AC are recommended by the Federal Aviation Administration (FAA) for the maintenance and minor repairs of airport pavements. This AC offers general guidance for maintenance and is neither binding nor regulatory.

Use of this AC is not mandatory. For major maintenance projects, the airport should utilize plans and specifications developed under the direction of a pavement design engineer.

For all maintenance and repair projects funded with federal grant monies through the Airport Improvement Program (AIP) and with revenue from the Passenger Facility Charge (PFC) Program, the airport must use the guidelines and specifications for materials and methods in AC 150/5370-10, Standards for Specifying Construction of Airports. Pavement maintenance discussed in this AC is specific to airfield pavements. Maintenance of airport access roads and other non-aeronautical pavements may typically use state highway standards.

4. Principal changes. The AC contains the following principal changes:

- a. Revised and reformatted entire AC.
- b. Added paragraph on operational safety on airports during construction in Chapter 1.
- c. Simplified Chapter 2. Moved information on friction, drainage, etc., into Chapter 2.
- d. Added paragraph on wildlife hazard attractants and mitigation with respect to drainage systems to Chapter 2.
- e. Split Table 6-1 into two tables; updated and simplified tables for Quick Guide for Maintenance and Repair of Common Rigid Pavement Surface Problems and Quick Guide for Maintenance and Repair of Common Flexible Pavement Surface problems.

- f. Deleted Tables 6-2 through 6-10 from previous release.
- g. Deleted “Pavement Maintenance Management Program” from appendices. Information has been moved to AC 150/5380-7, Airport Pavement Management Program (PMP).
- h. Deleted “Generic Specifications” and “Generic Typical Details” and replaced with typical repair procedures.
- i. Updated Bibliography.

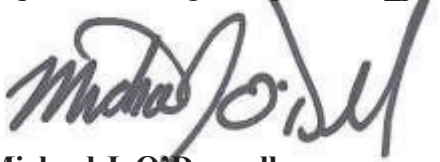
5. Related reading material. The publications in Appendix B, Bibliography, provide further guidance and technical information.

6. Metric units. Throughout this AC, U. S. customary units will be used followed with “soft” (rounded) conversion to metric units. The U. S. customary units govern.

7. Comments or suggestions for improvements to this AC should be sent to:

Federal Aviation Administration
Airport Engineering Division (AAS-100)
800 Independence Avenue, S.W.
Washington, DC 20591

8. Copies of this AC. This AC is available on the FAA Airport website:
http://www.faa.gov/regulations_policies/advisory_circulars/.



Michael J. O'Donnell
Director of Airport Safety and Standards

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Chapter 1. Introduction to Airport Pavement Maintenance

1.1. General.

This advisory circular (AC) provides information on the types of pavement distress that occur to airport pavements and typical corrective action during preventive and remedial maintenance activities. Maintenance includes preventive and any regular or recurring work necessary to preserve existing airport pavements in good condition. Replacing individual parts and mending portions of a pavement are considered minor repair. Typical preventive and regular or recurring pavement maintenance includes: routine cleaning, filling, and/or sealing of cracks; patching pavement; seal coating; grading pavement edges; maintaining pavement drainage systems; and restoring pavement markings. Timely maintenance and repair of pavements is essential in maintaining adequate load-carrying capacity, good ride quality necessary for the safe operation of aircraft, good friction characteristics under all weather conditions, and minimizing the potential for foreign object debris (FOD).

Some older pavements were not designed for today's aircraft fleet and are exposed to much greater loads than those initially considered. FAA airport pavement design is based upon a minimum 20-year structural life, with the understanding that regular, routine maintenance is performed. Without regular maintenance, the pavement may not achieve the intended structural life.

Airport pavements require continual routine maintenance, rehabilitation and upgrading. Immediately after completion, airport pavements begin a gradual deterioration attributable to weather and loading. Normal distresses in the pavement structure due to weathering, fatigue effects, and differential movement in the underlying subbase occur over a period of years. This gradual deterioration is accelerated by, among other things, faulty construction techniques, substandard materials, or poor workmanship. Traffic loads in excess of those forecast during pavement design may also contribute to shortened pavement life.

The most effective means of preserving airport runways, taxiways, aprons, and other pavement areas is to implement a comprehensive maintenance program. An effective maintenance program takes a coordinated, budgeted, and systematic approach to both preventive and remedial maintenance. A systematic approach ensures continual vigilance and many airports using this approach have experienced tangible benefits. The comprehensive maintenance program should be updated annually and feature a schedule of inspections and a list of required equipment and products. The airport should systematically make repairs and take preventive measures when necessary.

Airport Improvement Program (AIP) grants require many airports to develop and maintain an effective airport pavement maintenance-management program. The FAA also encourages airports that are not specifically required to develop maintenance programs to do so as a means of preserving their facilities. Refer to [AC 150/5380-7](#), Airport Pavement Management Program (PMP), for information on PMP.

Early detection and repair of pavement defects is the most important preventive maintenance procedure. Failure to perform routine maintenance during the early stages of deterioration will

eventually result in serious pavement distresses that require extensive repairs that will be costly in terms of dollars and closure time. The cause of pavement distresses must first be determined so an airport can select a repair method that not only corrects the present damage, but will also prevent or retard its progression.

Airports should prioritize long term solutions rather than focusing on immediate, short-term remedies. The selection of a rehabilitation method should consider both economic and engineering impacts of all practicable alternatives. The cost of rehabilitation alternatives should be compared over some finite period of time (life cycle), considering the future economic consequences of a repair method as well as the initial rehabilitation maintenance costs.

1.2. Operational safety on airports during construction.

Airports are complex environments, and procedures and conditions associated with construction and maintenance 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 and maintenance activities can minimize disruption of normal aircraft operations and avoid situations that compromise the airport's operational safety. An airport operator has overall responsibility for all activities on an airport, including construction and maintenance. The airport operator must understand how construction and maintenance activities and aircraft operations affect one another to be able to develop an effective plan to complete the project.

An effective project construction safety and phasing plan (CSPP) should be developed for maintenance activities. The development of the CSPP includes identifying the areas of the airport affected by the project; the impact to normal airport operations, if any, and any temporary changes that are required with respect to air traffic operations, aircraft rescue and fire fighting (ARFF) or other operations; and how risk will be managed. AC 150/5370-2, Operational Safety on Airports During Construction, provides additional information and guidance about safety on airports during construction.

Chapter 2. Airport Pavements

2.1. General.

This chapter is a very general and brief overview of airport pavements. Airport pavements are designed, constructed, and maintained to support the critical loads imposed by aircraft. Airport pavements produce a firm, stable, smooth, skid-resistant, all-year, all-weather surface free of debris or other particles that may be blown or picked up by propeller wash or jet blast. The quality and thickness of the pavement must ensure the pavement will not fail under the imposed loads and the pavement must be durable enough to withstand the abrasive action of traffic, adverse weather conditions, and other deteriorating influences. To ensure the necessary strength of the pavement and to prevent unmanageable distresses from developing, the airport should consider various design, construction, and material-related parameters. For guidance and design standards for pavements, refer to AC 150/5320-6, Airport Pavement Design and Evaluation. For materials and methods for construction of airports, refer to AC 150/5370-10, Standards for Specifying Construction of Airports. The ACs are available at http://www.faa.gov/regulations_policies/advisory_circulars/.

2.2. Types of pavements.

Pavements generally fall into two types: flexible and rigid. Figure 2-1 shows a typical pavement structure and acceptable materials for each layer.

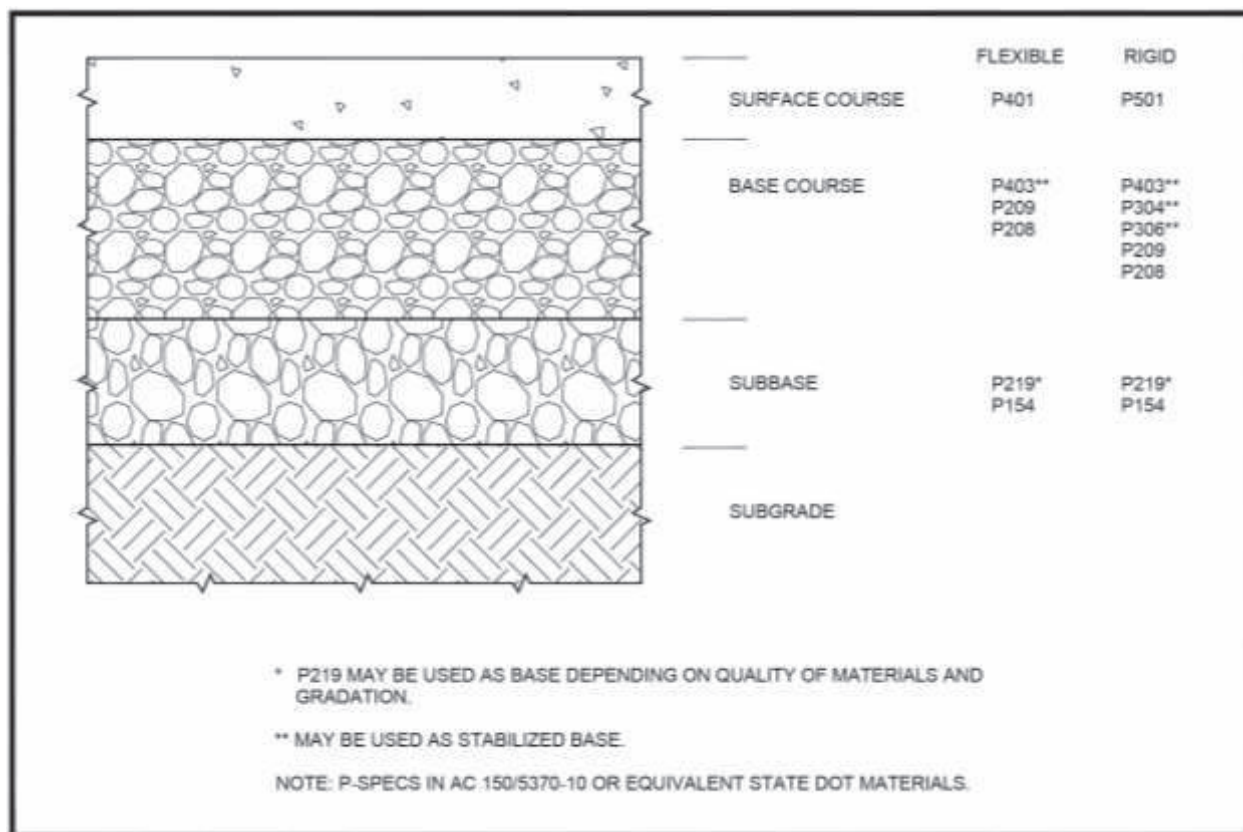


Figure 2-1. Typical pavement structure

2.2.1. Flexible pavement composition and structure. Flexible pavements support loads through bearing. They comprise several layers of carefully selected materials designed to gradually distribute loads from the pavement surface to the layers underneath. The design ensures the load transmitted to each successive layer does not exceed the layer's load-bearing capacity. The various layers composing a flexible pavement section and the functions the various layers perform are described below.

a. Bituminous surface (wearing course). The bituminous surface, or wearing course, is made up of a mixture of various selected aggregates bound together with asphalt cement or other bituminous binders. The material used in the surface course is commonly referred to as Hot-Mix Asphalt (HMA). The HMA prevents the penetration of surface water into the base course; provides a smooth, well-bonded surface free from loose particles, which might endanger aircraft or people; resists the stresses caused by aircraft loads; and supplies a skid-resistant surface without causing undue wear on tires.

b. Base course. The base course serves as the principal structural component of the flexible pavement. It distributes the imposed wheel load to the pavement foundation, the subbase, and/or the subgrade. The base course must have sufficient quality and thickness to prevent failure in the subgrade and/or subbase, withstand the stresses produced in the base itself, resist vertical pressures that tend to produce consolidation and distortion of the surface course, and resist volume changes caused by fluctuations in its moisture content. The quality of the base course is a function of its composition, physical properties, and compaction of the material. The materials composing the base course are select hard, durable aggregates, which generally fall into two main classes: stabilized and granular. The stabilized bases normally consist of crushed or uncrushed aggregate bound with a stabilizer, such as portland cement or asphalt cement. The granular bases normally consist of crushed or uncrushed aggregate constructed on a prepared subgrade.

c. Subbase. The subbase layer is used in areas where frost action is severe or the subgrade soil is weak. The subbase course functions like the base course, but the material requirements for the subbase are not as strict as those for the base course because the subbase is subjected to lower load stresses. The subbase consists of stabilized or properly compacted granular material.

d. Subgrade. The subgrade is the soil layer that forms the foundation of the pavement section. Subgrade soils are subjected to lower stresses than the surface, base, and subbase courses. Since load stresses decrease with depth, the controlling subgrade stress usually lies at the top of the subgrade. The combined thickness of subbase, base, and surface course must be great enough to reduce the stresses occurring in the subgrade to values that will not cause excessive distortion or displacement of the subgrade soil layer.

2.2.2. Rigid pavement composition and structure. Rigid pavements support loads through flexural action. Rigid pavements normally use portland cement concrete (PCC) as the prime structural element. Depending on conditions, engineers may design the PCC pavement slab with plain, lightly reinforced, continuously reinforced, or pre-stressed concrete. The PCC pavement slab is usually placed on a compacted granular or treated subbase supported by a compacted subgrade. The subbase provides uniform stable support and may provide subsurface drainage. The PCC pavement slab has considerable flexural strength and spreads the applied loads over a

large area. Rigid pavement strength is most economically built into the PCC pavement slab itself with optimum use of low-cost materials under the slab. The various layers composing a rigid pavement section and the functions the various layers perform are described below.

a. PCC pavement slab (surface course). The PCC pavement slab provides structural support to the aircraft, provides a skid-resistant surface, and prevents the infiltration of surface water into the subbase.

b. Base. The base provides uniform stable support for the pavement slab. The base also serves to control frost action, provide subsurface drainage, control swelling of subgrade soils, provide a stable construction platform for rigid pavement construction, and prevent pumping of fine-grained soils. Rigid pavements generally require a minimum base thickness of 4 inches (10 cm).

c. Stabilized base. All new rigid pavements designed to accommodate aircraft weighing 100,000 pounds (45,000 kg) or more must have a stabilized base. The structural benefit imparted to a pavement section by a stabilized base is reflected in the modulus of subgrade reaction assigned to the foundation.

d. Subbase. The subbase layer is used in areas where frost action is severe or the subgrade soil is weak. The subbase course functions like the base course, but the material requirements for the subbase are not as strict as those for the base course because the subbase is subjected to lower load stresses. The subbase consists of stabilized or properly compacted granular material.

e. Subgrade. The subgrade is the soil layer that forms the foundation of the pavement section. Subgrade soils are subjected to lower stresses than the surface and subbase courses. These stresses decrease with depth, and the controlling subgrade stress is usually at the top of the subgrade unless unusual conditions exist. Unusual conditions, such as a layered subgrade or sharply varying water content or densities, may change the locations of the controlling stress. The soils investigation should check for these conditions. The pavement structure above the subgrade must be capable of reducing stresses imposed on the subgrade to values that are low enough to prevent excessive distortion or displacement of the subgrade soil layer.

2.3. Drainage of airport pavements.

Maintenance of the airport drainage system is essential in airport pavement preventive maintenance. No other factor plays a more important role in the ability of a pavement to withstand the effects of weather and traffic. The drainage system collects and removes surface water runoff, removes excess ground water, lowers the water table, and protects slopes from erosion. An inadequate drainage system can cause saturation of the subgrade and subbase, slope erosion, and loss of the load-bearing capacity of the paved surfaces.

Water has a detrimental effect on pavement performance, primarily by either weakening subsurface materials or eroding material by free water movement. For flexible pavements, the weakening of the base, subbase, or subgrade when saturated with water is one of the main causes of pavement failures. In rigid pavement, free water, trapped between the concrete surface and an impermeable layer directly beneath the concrete, will move due to pressure caused by loadings. This movement of water (referred to as pumping) erodes the subsurface material, creating voids

under the concrete surface. In frost areas, subsurface water will contribute to frost damage by heaving during freezing and loss of subgrade support during thawing. Poor subsurface drainage can also contribute to secondary damage such as durability cracking (D cracking) or swelling of subsurface materials.

The type, speed, and volume of traffic will influence the criteria used in the design of pavement drainage systems. For rigid pavements, pumping is greatly increased as the volume and speed of the traffic increases. For flexible pavements, the buildup of pore pressures as a result of high-volume, high-speed traffic is a primary cause of the weakening of the pavement structure. For these reasons, the criteria for a subsurface drainage system under airfield runways and taxiways will be more stringent than for airfield parking aprons or other pavements that have low-volume and low-speed traffic.

The two types of water to be considered are surface water and subsurface water. Surface water is the most important source of water and the source of most concern. Subsurface water is important in frost areas and areas of very high water table or areas of artesian water because the free water collects under the surface by freeze/thaw action. In many areas, perched water may develop under pavements due to a reduced rate of evaporation of the water from the surface. Where drainage is required for surface and subsurface water, it is generally good practice for each system to function independently.

a. Surface drainage. Surface drainage controls, collects, and disposes of water from rainstorms and melting snow and ice that accumulate on the surface of the pavement and nearby ground. Surface drainage of pavements is achieved by constructing the pavement surface and adjacent ground in a way that allows for adequate runoff. The water may be collected at the edges of the paved surface. Although some water will enter the pavement structure through cracks, open joints, and other surface openings, this penetration may be kept to a minimum by proper surface maintenance procedures. Surface water should not be allowed to enter a subdrainage system because it often contains soil particles that may cause the subdrains to silt up.

b. Subsurface drainage. Subsurface drainage is provided for the pavement by a permeable layer of aggregate or permeable stabilized layers with longitudinal pipes for collecting the water and outlet pipes for rapid removal of the water from the subsurface drainage system. Subsurface drains may also consist of perforated collection pipes or conduits in a permeable sand or gravel trench encased in geotextiles with outlet pipes. These systems remove excess water from pavement foundations to prevent weakening of the base and subgrade and to reduce damage from frost action. Subsurface drainage placed at the pavement edge also minimizes surface runoff from entering the perimeter of the pavement structure.

AC 150/5320-5, Airport Drainage Design, contains additional guidance and technical information on airport drainage.

2.3.1. Maintenance of subsurface drainage systems. Commitment to maintenance is as important as providing subsurface drainage systems. In fact, an improperly maintained drainage system can cause more damage to the pavement structure than if no drainage were provided at all. Poor maintenance leads to clogged or silted outlets and edge-drain pipes, missing rodent

screens, excessive growth of vegetation blocking outlet pipes and openings on daylighted bases, and growth of vegetation in side ditches. These problems can potentially cause the back up of water within the pavement system, thereby defeating the purpose of providing the drainage system. Inspections and maintenance of subsurface drainage systems should be made an integral part of the policy of any agency installing these systems.

2.3.2. Drainage inspection. The pavement maintenance program should take into account the importance of adequate drainage of surface and ground water because water is directly or partly responsible for many pavement failures and deterioration. Sufficient drainage for collection and disposal of surface runoff and excess ground water is vital to the stability and serviceability of pavement foundations. Trained personnel should conduct periodic and complete inspections of drainage systems and record and correct defective conditions of surface and subsurface drainage systems. Runway and taxiway edge drains and catch basins should be inspected at intervals (e.g., spring, summer, fall, and winter) and monitored following unusually heavy rainfall. The personnel making the inspection should look for distress signals that may indicate impending problems including: ponding of water; soil buildup at pavement edges preventing runoff; eroded ditches and spill basins; broken or displaced inlet grates or manhole covers; clogged or silted inlet grates and manhole covers; blocked subsurface drainage outlets; broken or deformed pipes; backfill settlement over pipes; erosion around inlets; generally poor shoulder shaping and random erosion; and discoloration of pavement at joints or cracks.

2.3.3. Wildlife hazard attractants and mitigation. Throughout the planning, design, construction, and maintenance of airport surface storm drainage and subsurface drainage systems the airport must emphasize and address the elimination and/or mitigation of drainage features in the project(s) that could attract hazardous wildlife on and/or around an airport. Refer to the following documents and sites for guidance on wildlife hazards at airports:

a. AC 150/5200-33, Hazardous Wildlife Attractants On or Near Airports, contains guidance on certain land uses that have the potential to attract hazardous wildlife on or near airports. The AC is available at: http://www.faa.gov/airports/resources/advisory_circulars/.

b. Wildlife Hazard Management at Airports, A Manual for Airport Personnel and additional information on wildlife issues can be found on the FAA Wildlife Hazard Mitigation website at: http://www.faa.gov/airports/airport_safety/wildlife/.

2.4. Pavement Management Program (PMP).

A PMP provides one method of establishing an effective maintenance and repair system. A PMP is a systematic and consistent procedure for scheduling maintenance and rehabilitation based on maximizing benefits and minimizing costs. A PMP not only evaluates the present condition of a pavement, but also can be used to forecast its future condition. By projecting the rate of deterioration, a PMP can facilitate a life-cycle cost analysis for pavement maintenance/repair procedures and help determine the best alternative.

The primary component of any PMP is the ability to track a pavement's deterioration and determine the cause of the deterioration. This requires an evaluation procedure that is objective, systematic, and repeatable. One such procedure is the Pavement Condition Index (PCI). The

PCI is a rating of the surface condition of a pavement and indicates functional performance. A PCI evaluation may also provide an indication of the pavement's structural performance. Periodic PCI determinations on the same pavement will show the change in performance level over time. Airports can use the pavement condition survey to develop pavement performance data. Distress intensity recorded over time helps determine how the pavement is performing. The rate at which the distress intensity increases is a good indicator of the pavement performance. The PCI is determined in accordance with procedures contained in ASTM D5340, Standard Test Method for Airport Pavement Condition Index Surveys. Refer to AC 150/5380-7 for additional information on PMP.

2.5. Friction.

Airports should maintain runway pavements that provide surfaces with good friction characteristics under all weather conditions. Over time, the skid-resistance of runway pavement deteriorates due to a number of factors, the primary ones being mechanical wear and polishing action from aircraft tires rolling or braking on the pavement and the accumulation of contaminants, chiefly rubber, on the pavement surface. The effect of these two factors is directly dependent upon the volume and type of aircraft traffic. Other influences on the rate of deterioration includes, but is not limited to, local weather conditions, the type of pavement (HMA or PCC), the materials used in original construction, any subsequent surface treatment, drainage, and airport maintenance practices.

AC 150/5320-12, Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces, provides guidance on frequency and procedures for conducting friction surveys. Visual observations made during a pavement inspection are an inadequate predictor of skid resistance.

Contaminants, such as rubber deposits, dust particles, jet fuel, oil spillage, water, snow, ice, and slush, all cause friction loss on runway pavement surfaces. Removal and runway treatment for snow, ice, and slush are covered in AC 150/5200-30, Airport Winter Safety and Operations. The most persistent contaminant problem is deposit of rubber from tires of landing jet aircraft. Rubber deposits occur at the touchdown areas on runways and can be quite extensive. Heavy rubber deposits can completely cover the pavement surface texture causing loss of aircraft braking capability and directional control, particularly when runways are wet.

2.6. Nondestructive Testing (NDT).

In addition to collecting information from visual inspections of the pavement areas and historical construction records, airports should consider collecting data from nondestructive testing. Such data may be used to evaluate the pavement load-carrying capacity. Refer to AC 150/5370-11, Use of Nondestructive Testing Devices in the Evaluation of Airport Pavements, for information on NDT.

Chapter 3. Pavement Distress

3.1. General.

This chapter provides a discussion and description of the types of pavement distress and relates them to likely causal factors. Various external signs or indicators make the deterioration of a pavement apparent, and often reveal the probable causes of the failure. AC 150/5380-7, ASTM D5340, and ASTM D6433, Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys, provide additional information on distresses.

3.2. Types of pavement distress.

The discussions of problems related to pavement distress are generally based on whether the pavement has a flexible or rigid surface type.

3.2.1. Flexible pavement distresses.

a. Cracking. Cracks in flexible pavements are caused by deflection of the surface over an unstable foundation, shrinkage of the surface, thermal expansion and contraction of the surface, poorly constructed lane joints, or reflection cracking. The following types of cracks commonly occur in flexible pavements.

(1) Longitudinal and transverse cracks. Longitudinal and transverse cracks may result from shrinkage or contraction of the HMA surface. Shrinkage of the surface material is caused by oxidation and age hardening of the asphalt material. Contraction is caused by thermal fluctuations. Poorly constructed paving lane joints may accelerate the development of longitudinal joint cracks. This type of cracking is not load associated.

(2) Block cracking. Block cracks are interconnected cracks that divide the pavement into approximately rectangular pieces. The blocks may range in size from approximately 1 foot by 1 foot (0.3 m by 0.3 m) to 10 feet by 10 feet (3 m by 3 m). Block cracking is caused mainly by contraction of the asphalt and daily temperature cycling that results in daily stress/strain cycling. It is not load associated. The occurrence of block cracking usually indicates that the asphalt has hardened significantly. Block cracking normally occurs over a large portion of pavement area, but sometimes will occur only in non-traffic areas. Block cracking differs from alligator cracking which is discussed in (4) below.

(3) Reflection cracking. Vertical or horizontal movement in the pavement beneath an overlay cause this type of distress. This movement may be due to expansion and contraction caused by temperature and moisture changes or traffic loads. The cracks in HMA overlays reflect the crack pattern or joint pattern in the underlying pavement. They occur most frequently in HMA overlays on PCC pavements. However, they may also occur on overlays of HMA pavements when cracks or joints in the old pavement have not been properly repaired.

(4) Alligator or fatigue cracking. Alligator or fatigue cracking is a series of interconnecting cracks caused by fatigue failure of the HMA surface under repeated traffic loading. The cracking begins at the bottom of the HMA surface (or stabilized base) where tensile stress and strain are highest under a wheel load. The cracks propagate to the surface

initially as a series of parallel cracks. After repeated traffic loading or excessive deflection of the HMA surface over a weakened or under-designed foundation or interlayer, the cracks connect, forming many sided sharp angled pieces that develop a pattern resembling chicken wire or alligator skin. The pieces are less than 2 feet (0.6 m) on the longest side.

(5) Slippage cracks. Slippage cracks appear when braking or turning wheels cause the pavement surface to slide and deform. This usually occurs when there is a low-strength surface mix or poor bond between the surface and the next layer of the pavement structure. These cracks are crescent or half-moon-shaped with the two ends pointing away from the direction of traffic.

b. Disintegration. Disintegration in a flexible pavement is typically caused by climate, insufficient compaction of the surface, insufficient asphalt binder in the mix, loss of adhesion between the asphalt coating and aggregate particles, or severe overheating of the mix. The following types of disintegration commonly occur.

(1) Raveling. Raveling is the wearing away of the pavement surface caused by the dislodging of aggregate particles. This distress may indicate that the asphalt binder has aged and hardened significantly. As the raveling continues, larger pieces break free, and the pavement takes on a rough and jagged appearance which can produce a significant source for FOD.

(2) Weathering. Weathering is the wearing away of the asphalt binder and fine aggregate matrix from the pavement surface. The asphalt surface begins to show signs of aging which may be accelerated by climatic conditions. Loss of fine aggregate matrix is noticeable and may be accompanied by fading of the asphalt pavement color.

(3) Potholes. A pothole is defined as a disruption in the pavement surface where a portion of the pavement material has broken away, leaving a hole. Most potholes are caused by fatigue of the pavement surface. As fatigue cracks develop, they interlock forming alligator cracking. When the sections of cracked pavement work loose, they may eventually be picked out of the surface by continued wheel loads, and form a pothole. In northern climates, where freeze-thaw cycles are severe, pothole development is exacerbated due to the continuous freeze-thaw action and may not be related solely to traffic patterns. Although possible, potholes are not a common distress to airfields.

(4) Asphalt stripping. Asphalt stripping is caused by moisture infiltration into the HMA pavement structure leading to “stripping” of the bituminous binder from the aggregate particles. Asphalt stripping of HMA pavements may also be caused by cyclic water-vapor pressures within the mixture scrubbing the binder from the aggregates.

(5) Jet blast erosion. Jet blast erosion is defined as a darkened area of pavement surface where the bituminous binder has been burned or carbonized. Localized burned areas may vary in depth up to approximately 1/2-inch (13 mm).

(6) Patching and utility cut patch. A patch is defined as an area where the original pavement has been removed and replaced by a filler material. Deterioration of a patch typically progresses at a higher rate than the original pavement. Deterioration of patch areas affects the ride quality and creates FOD potential.

c. Distortion. Distortion in flexible pavements is caused by foundation settlement, insufficient compaction of the pavement courses, a lack of stability in the bituminous mix, poor bond between the surface and the underlying layer of the pavement structure, and swelling soils or frost action in the subgrade. The following types of distortion commonly occur in flexible pavement.

(1) Rutting. A rut is characterized by a surface depression in the wheel path. In many instances, ruts become noticeable only after a rainfall when the wheel paths fill with water. This type of distress is caused by a permanent deformation in any one of the pavement layers or subgrade, resulting from the consolidation or displacement of the materials due to traffic loads.

(2) Corrugation. Corrugation results from a form of plastic surface movement typified by ripples across the surface. Corrugation can be caused by a lack of stability in the mix or a poor bond between material layers.

(3) Shoving. Shoving is the localized bulging of a pavement surface. It can be caused by lack of stability in the mix, shear movement at an interlayer, or lateral stresses produced by adjacent PCC pavement during expansion.

(4) Depressions. Depressions are localized low areas of limited size. Light depressions are typically only noticeable after a rain, when ponding creates “birdbath” areas. Depressions may result from heavier traffic than the pavement was designed for; localized settlement of the underlying pavement layers; or poor construction methods.

(5) Swelling. An upward bulge in the pavement’s surface characterizes swelling. It may occur sharply over a small area or as a longer gradual wave. Both types of swelling may be accompanied by surface cracking. A swell is usually caused by frost action surrounding dissimilar material types in the subgrade or by swelling soil.

d. Loss of skid resistance. Factors that decrease the skid resistance of a pavement surface and can lead to hydroplaning include too much asphalt in the bituminous mix; too heavy a tack coat; poor aggregate which is subject to wear; paint; and buildup of contaminants. In flexible pavements, a loss of skid resistance may result from the following distresses.

(1) Polished aggregate. Aggregate polishing is caused by repeated traffic applications. Polished aggregate is present when the portion of aggregate extending above the asphalt is either very small, of poor quality, or there are no rough or angular particles to provide good skid resistance.

(2) Contaminants. Accumulation of rubber particles, oils, or other external materials on the pavement surface will reduce the skid resistance of a pavement. In addition, buildup of rubber deposits in pavement grooves will reduce the effectiveness of the grooves and increase the likelihood of hydroplaning.

(3) Bleeding. Bleeding is characterized by a film of bituminous material on the pavement surface that resembles a shiny, glass-like, reflecting surface that usually becomes quite sticky. It is caused by excessive amounts of asphalt binder in the mix and/or low air-void content. Bleeding occurs when asphalt binder fills the voids in the mix during hot weather and

then expands out onto the surface of the pavement. Bleeding may also result when an excessive tack coat is applied prior to placement of the HMA surface. Since the bleeding process is not reversible during cold weather, asphalt binder will accumulate on the surface. Extensive bleeding may cause a severe reduction in skid resistance.

(4) Fuel/oil spillage. Continuous fuel/oil spillage on a HMA surface will soften the asphalt. Areas subject to only minor fuel/oil spillage will usually heal without repair, and only minor damage will result.

3.2.2. Rigid pavement distresses.

a. Cracking. Cracks in rigid pavements often result from stresses caused by expansion and contraction or warping of the pavement. Overloading, loss of subgrade support, and insufficient and/or improperly cut joints acting singly or in combination are also possible causes. The following types of cracking typically occur in rigid pavements.

(1) Longitudinal, transverse, and diagonal cracks. A combination of repeated loads and shrinkage stresses usually causes this type of distress. It is characterized by cracks that divide the slab into two or three pieces that may indicate poor construction techniques, underlying pavement layers that are structurally inadequate for the applied load, or pavement overloads.

(2) Corner breaks. Load repetition, combined with loss of support and curling stresses, usually causes cracks at the slab corner. The lack of support may be caused by pumping or loss of load transfer at the joint. Corner breaks are characterized by a crack that intersects the joints at a distance less than or equal to one-half of the slab length on both sides, measured from the corner of the slab. A corner break differs from a corner spall in that the break extends vertically through the entire slab thickness; a corner spall intersects the joint at an angle.

(3) Durability “D” cracking. D cracking usually appears as a pattern of cracks running in the vicinity of and parallel to a joint or linear crack. It is caused by the concrete’s inability to withstand environmental factors such as freeze-thaw cycles because of variable expansive aggregates. This type of cracking may eventually lead to disintegration of the concrete within 1 to 2 feet (0.3 m to 0.6 m) of the joint or crack.

(4) Shrinkage cracking. Shrinkage cracks are hairline cracks that are usually only a few feet long and do not extend across the entire slab. They are formed during the setting and curing of the concrete and usually do not extend through the depth of the slab. Typically, shrinkage cracks do not extend greater than 1/4-inch (6 mm) from the slab surface and may be primarily in the finished surface paste only.

(5) Shattered slab/intersecting cracks. A shattered slab is defined as a slab where intersecting cracks break up the slab into four or more pieces. This is primarily caused by overloading due to traffic and/or inadequate foundation support.

b. Joint seal damage. Joint seal damage is any condition that enables incompressible foreign material such as soil or rocks to accumulate in the joints or that allows infiltration of water. Accumulation of foreign materials prevents the slabs from expanding and may result in

buckling, shattering, or spalling. Water infiltration through joint seal damage can cause pumping or deterioration of the base. Typical types of joint seal damage include stripping of joint sealant, extrusion of joint sealant, hardening of the filler (oxidation), loss of bond to the slab edges, and absence of sealant in the joint. Joint seal damage is caused by improper joint width, use of the wrong type of sealant, incorrect application, not properly cleaning the joint before sealing, and/or climate (aging).

c. Disintegration. Disintegration is the breaking up of a pavement into small, loose pieces including the dislodging of aggregate particles. Improper curing and finishing of the concrete, unsuitable aggregates, and improper mixing of the concrete can cause this distress. Disintegration typically falls into the following categories.

(1) Scaling, map cracking, and crazing. Scaling is the disintegration and loss of the wearing surface. A surface weakened by improper curing or finishing and freeze-thaw cycles can lead to scaling. Map cracking or crazing refers to a network of shallow hairline cracks that extend only through the upper surface of the concrete. Crazing usually results from improper curing and/or finishing of the concrete and may lead to scaling of the surface.

(2) Alkali-Silica Reactivity (ASR). ASR is another source of distress associated with map cracking. ASR is caused by an expansive reaction between alkalis and certain reactive silica minerals, which forms a gel. The gel absorbs water, causing expansion, which may damage the concrete and adjacent structures. Alkalis are most often introduced by the portland cement within the pavement. ASR may be indicated by cracking of the concrete pavement (often in a map pattern); white, brown, gray or other colored gel or staining that may be present at the crack surface; and/or an increase in concrete volume (expansion) that may result in distortion of adjacent or integral structures or physical elements.

(3) Joint spalling. Joint spalling is the breakdown of the slab edges within 2 feet (0.6 m) of the side of the joint. A joint spall usually does not extend vertically through the slab but intersects the joint at an angle. Joint spalling often results from excessive stresses at the joint or crack caused by infiltration of incompressible materials or weak concrete at the joint (caused by overworking) combined with traffic loads. Joint spalling also results when dowels, which prevent slab movement, become misaligned either through improper placement or improper slippage preparation.

(4) Corner spalling. Corner spalling is the raveling or breakdown of the slab within approximately 2 feet (0.6 m) of the corner. It differs from a corner break in that the spall usually angles downward to intersect the joint, while a break extends vertically through the slab. The same mechanisms that cause joint spalling often cause corner spalling, but this type of distress may appear sooner because of increased exposure.

(5) Blowups. Blowups, although not common, usually occur at a transverse crack or joint that is not wide enough to permit expansion of the concrete slabs. Insufficient width may result from infiltration of incompressible materials into the joint space or by gradual closure of the joint caused by expansion of the concrete due to ASR. When expansive pressure cannot be relieved, a localized upward movement of the slab edges (buckling) or shattering will occur in the vicinity of the joint. Blowups normally occur only in thin pavement sections, although

blowups can also appear at drainage structures (manholes, inlets, etc.). The frequency and severity of blowups may increase with an asphalt overlay due to the additional heat absorbed by the dark asphalt surface. They generally occur during hot weather because of the additional thermal expansion of the concrete.

(6) Popouts. A popout is defined as a small piece of pavement that breaks loose from the concrete surface. This is caused by freeze-thaw action in combination with expansive aggregates and can be caused by ASR. Popouts usually range from approximately 1 to 4 inches (2.5 to 10 cm) in diameter and from 1/2 to 2 inches (1.3 to 5 cm) deep. A popout may also be caused by a singular piece of large aggregate that breaks loose from the concrete surface or caused by clay balls in the concrete mix.

(7) Patching. A patch is defined as an area where the original pavement has been removed and replaced by a filler material. Deterioration of a patch typically progresses at a higher rate than the original pavement. Patching is usually divided into two types:

(a) Small. A small patch is defined as an area less than 5 ft² (0.5 m²).

(b) Large and utility cuts. A large patch is defined as an area greater than 5 ft² (0.5 m²). A utility cut is defined as a patch that has replaced the original pavement due to placement of underground utilities.

d. Distortion. Distortion refers to a change in the pavement surface's original position, and it results from foundation settlement, expansive soils, frost-susceptible soils, or loss of fines through improperly designed subdrains or drainage systems. The following types of distortion generally occur.

(1) Pumping. The deflection of the slab when loaded may cause pumping, which is characterized by the ejection of water and underlying material through the joints or cracks in a pavement. As the water is ejected, it carries particles of gravel, sand, clay, or silt with it, resulting in a progressive loss of pavement support that can lead to cracking. Evidence of pumping includes surface staining and base or subgrade material on the pavement close to joints or cracks. Pumping near joints indicates poor joint-load transfer, a poor joint seal, and/or the presence of ground water.

(2) Settlement or faulting. Settlement or faulting is a difference in elevation at a joint or crack caused by upheaval or non-uniform consolidation of the underlying pavement layer(s) material. This condition may result from loss of fines, frost heave, or swelling soils.

e. Loss of skid resistance. Skid resistance refers to the ability of a pavement to provide a surface with the desired friction characteristics under all weather conditions. It is a function of the surface texture. Loss of skid resistance is caused by the wearing down of the textured surface through normal wear and tear or the buildup of contaminants.

(1) Polished aggregates. Some aggregates become polished quickly under traffic. Naturally polished aggregates create skid hazards if used in the pavement without crushing. Crushing the naturally polished aggregates creates rough angular faces that provide good skid resistance.

(2) Contaminants. Rubber deposits building up over a period of time will reduce the surface friction characteristics of a pavement. Oil spills and other contaminants will also reduce the surface friction characteristics. In addition, buildup of rubber deposits in pavement grooves will reduce the effectiveness of the grooves and increase the likelihood of hydroplaning.

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Chapter 4. Guidelines for Inspection of Pavements.

4.1. Introduction to pavement inspection.

Airports should prioritize the upkeep and repair of all pavement surfaces in the aircraft operating areas of the airport to help ensure safe aircraft operations. While deterioration of the pavements from usage and exposure to the environment cannot be completely prevented, a timely and effective maintenance program can minimize this deterioration. Adequate and timely maintenance is the greatest single means of controlling pavement deterioration. The failure of airport pavements and drainage features can be directly attributed to inadequate maintenance characterized by the absence of a vigorously followed inspection program. Maintenance, no matter how effectively carried out, cannot overcome or compensate for a major design or construction inadequacy, but it can prevent the total and possibly disastrous failure that can result from such deficiencies. Maintenance inspections reveal at an early stage where a problem exists and provide warning and sufficient time to perform corrective action. Postponement of minor maintenance may evolve into major pavement repairs. Visible evidence of excessive stress and/or environmental distress in pavement systems may include cracks, holes, depressions, and other types of pavement distresses. The formation of distresses in airport pavements may severely affect the structural integrity, ride quality, and safety of airport pavements. To alleviate the effects of distresses and to improve the airport pavement serviceability, airports should adopt an effective and timely inspection and maintenance program and adequate repair procedures.

Although there are numerous distress types associated with airfield pavements, a particular concern on airfield pavements is the possibility that pavement distress will generate loose material that may strike aircraft propellers or be ingested into jet engines. This loose material and the resulting damage are commonly labeled as FOD. FOD can cause considerable damage to an aircraft and increase the cost of maintaining the aircraft in a safe operating condition. More important, FOD can cause undetected damage to an aircraft, making it unsafe to operate. All pavement inspections should address the issue of FOD to minimize its potential hazard. AC 150/5210-24, Airport Foreign Object Debris (FOD) Management, provides guidance on reducing FOD hazards.

AC 150/5200-18, Airport Safety Self-Inspection, provides information on airport self-inspection operational items such as pavement areas, safety areas, markings, signs, lighting, aircraft rescue and fire fighting, fueling operations, navigational aids, ground vehicles, obstructions, public protection, hazard management, construction, and snow and ice control.

4.2. Inspection procedures.

Maintenance is an ongoing process and a critical responsibility of airport personnel. Effective maintenance programs require a series of scheduled, periodic inspections, conducted by experienced engineers, technicians, or maintenance personnel. These inspections must be controlled to ensure that each element or feature is thoroughly inspected, potential problem areas are identified, and proper corrective measures are recommended and implemented. The maintenance program must provide for adequate follow-up to ensure corrective work is expeditiously accomplished and recorded. The organization and scope of maintenance activities

will vary in complexity and degree from airport to airport, however, the general types of maintenance required will be similar.

4.2.1. Inspection schedules. The airport is responsible for establishing a schedule for regular and routine pavement inspections to ensure all areas are thoroughly inspected. Conditions that may adversely affect the pavement, such as severe weather, may necessitate additional inspections. Airport personnel should also solicit reports from airport users and conduct daily drive-by-type inspections.

4.2.2. Recordkeeping. The airport should prepare and maintain records of all inspections and maintenance performed. These records should document the existing distresses, locations, probable causes, remedial actions required, and any follow up inspections and maintenance required. Records of materials and equipment used for maintenance and repair work should also be kept on file for future reference. Periodic review of these references may help reduce maintenance costs and improve pavement performance. AC 150/5380-7, Airport Pavement Management Program (PMP), provides additional guidance.

Chapter 5. Materials and Equipment

5.1. General.

Maintenance includes any regular or recurring work necessary to preserve existing airport pavements in good condition. Work typically involves the care or cleaning of existing airport pavement and incidental or minor pavement repair. Maintenance activities typically require a work crew of two to six people who are trained in the various repair techniques and who are familiar with the materials and equipment necessary to perform the routine pavement maintenance. Work requiring more staff is typically beyond the scope of normal maintenance activities. The following sections identify commonly used materials and equipment for normal maintenance activities. Additional information on materials and methods is also available in AC 150/5370-10. Equivalent state pavement specifications may also be used.

5.2. Common materials for maintenance and repair.

The materials listed below are commonly used for maintenance and repair of pavements.

5.2.1. Hot-mix asphalt (HMA). HMA is a blend of asphalt binder and well-graded, high-quality aggregates. The materials are mixed in a plant and placed and compacted while hot. HMA is used for construction of new airfield pavement and patching and overlay of airfield pavements. HMA for maintenance and repair should be equivalent or better than the existing pavement. P-401, Hot Mix Asphalt (HMA) Pavements or P-403, Hot Mix Asphalt (HMA) Pavements (Base, Leveling or Surface Course) in AC 150/5370-10; or equivalent state pavement specifications should be used.

5.2.2. Tack coat. A tack coat is a light application of emulsified asphalt applied to an existing pavement to provide a bond with an overlying course, such as a HMA overlay. A tack coat is also used on the sides of an existing pavement that has been cut vertically before patching. Asphalt emulsions are manufactured in several grades and are selected by the desired setting time. P-603, Bituminous Tack Coat in AC 150/5370-10 or equivalent state specifications may be used.

5.2.3. Crack and joint sealing material. Material for sealing cracks should meet ASTM standards for the type of pavement and service for which the sealant is intended.

a. ASTM D5893, Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements.

b. ASTM D6690, Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

c. ASTM D5249, Standard Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland-Cement Concrete and Asphalt Joints.

5.2.4. Crack filler material. Material for filling cracks should meet ASTM D5078, Standard Specification for Crack Filler, Hot-Applied, for Asphalt Concrete and Portland Cement Concrete Pavements.

5.2.5. Concrete. Concrete is a blend of portland cement, fine and coarse aggregate, and water, with or without additives. Concrete is used to repair a distressed portland cement concrete pavement so it may be used at its original designed capacity. P-501, Portland Cement Concrete Pavement in AC 150/5370-10 or equivalent state pavement specifications with non-reactive materials may be used.

5.2.6. Other materials and products. There are many other products available, such as epoxy resins and special concrete mixtures, that may be used for repair of pavements. The selection and use of these products must be in accordance with the manufacturers' requirements for the intended application. Local experience and conditions dictate acceptable products. State Departments of Transportation (DOTs) may also maintain list of materials that have performed well in a geographic area.

AC 150/5370-10 is another good source of information on materials and methods used for construction on airports.

5.3. Equipment for pavement maintenance.

There are many different types and models of equipment airports can use for pavement maintenance. Some commonly used pavement maintenance equipment include the following.

5.3.1. Power Saws. A pavement power saw is usually a one-person-operated, dolly-mounted unit with an abrasive circular blade. This type of saw can cut a straight line through flexible or rigid pavements and leave vertical sides. A random crack saw has a small diameter saw blade capable of tracking the crack.

5.3.2. Jackhammers. Jackhammers with chisel heads are commonly used for removal of existing pavement surfaces. Jackhammers must be used with caution to avoid damage to remaining pavement. Light, 30 pound (14 kg) or less, chipping hammers should be used to prepare partial depth repair patches.

5.3.3. Pavement grinders. A pavement grinder may be a one-person-operated, dolly-mounted unit with an abrasive cylindrical head 4 inches (10 cm) or more wide, or it may be variable-width diamond grinding equipment. Diamond grinding is a common rehabilitation technique used for tasks as varied as paint removal and pavement texturing.

5.3.4. Hand tools. Hand tools such as chisels, sledgehammers, shovels, pry bars, and picks can be used to remove deteriorated pavement. Rakes, lutes, and other such hand tools are used to move and level material placed in a patch area.

5.3.5. Front-end loaders and skid-steer loaders. Front-end loaders are useful when loading trucks with removed pavement. Skid-steer loaders are small versatile loaders that can be equipped with numerous attachments such as brooms or milling heads. Their small size and maneuverability make them ideal for maintenance activities.

5.3.6. Asphalt kettle. Asphalt kettles are usually small-tractor-mounted units that have the capacity to heat and store 40 to 500 gallons (150 to 2000 liters) of bituminous material. A pump forces the liquid material through spray nozzles located on a hand-held hose. These

units are used for priming and tacking on small jobs and for crack or surface sealing of HMA surfaces.

5.3.7. Vibratory plate compactors. Vibratory plate compactors are hand-operated units used to compact granular base or HMA plant-mix materials.

5.3.8. Vibratory and non-vibratory steel-wheel rollers. Steel-wheel rollers are used to compact material, including HMA in patchwork areas. Smaller rollers can be hand operated, while large rollers are self-powered.

5.3.9. Joint plow. A joint plow is used to remove old sealer from joints. This is usually a specially made tool attached to a small loader or tractor.

5.3.10. Joint router. A joint router is used to clear existing cracks or joints to be resealed. A router is usually a self-powered machine operating a rotary cutting tool. A rotary routing tool with a V-shaped end can be used for cleaning out random cracks. The use of a random crack saw is preferred for PCC pavements.

5.3.11. Random crack saw. A random crack saw is designed to follow irregular crack patterns in concrete and asphalt surfaces. The crack saw utilizes small diameter, dry-cut diamond blades in standard widths to create smooth sided cuts to prepare surfaces for proper crack filling. A center mounted blade configuration allows a crack saw to pivot about its own axis to more exactly follow random crack patterns easily.

5.3.12. Air compressor and sand blasting. Sand blasting may be used for final removal of old joint sealant, and is recommended for the final cleaning method for PCC surfaces prior to application of new sealant. Joints and cracks should be blown out with clean, dry compressed air immediately before applying new sealant. Air compressors must be equipped with oil and moisture traps to prevent contaminating the cleaned surface.

5.3.13. Pavement sweeper. A pavement sweeper can be used for cleaning the pavement surface and removing excess aggregate before and after repairs.

5.3.14. Heating kettle. A heating kettle is a mobile, indirect-fired double boiler used to melt hot-applied joint sealing material. It is equipped with a means to agitate and circulate the sealer to ensure uniform heating and melting of the entire charge in the kettle. Sealants may be applied to joints with an applicator attached directly to a pump unit on the kettle.

5.3.15. Pouring pot. A pouring pot, hand carried or mounted on a hand-pushed pot dolly, is used to pour hot sealing materials into a prepared crack or joint.

5.3.16. High-pressure water. High-pressure water, with the proper selection of spray nozzle and pressure, can be used to clean out joints prior to resealing and to clean vertical faces of pavement to be patched. Pressure should be monitored and controlled to the minimum necessary to minimize any damage to the remaining pavement.

5.3.17. Hot air lance. A hot air lance can be used to dry and heat cracks in existing bituminous material.

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Chapter 6. Pavement Repair Methods.

6.1. General.

This chapter describes various repair methods airports can use to correct airfield pavement distress. While these repair methods apply to specific types of distress and pavements, methods used should take into account the possibility of foreign object debris (FOD) damage to aircraft. FOD is defined as any object, live or not, located in an inappropriate location in the airport environment that has the capacity to injure airport or air carrier personnel and damage aircraft. FOD damage is any damage attributed to a foreign object that can be expressed in physical or economic terms, which may or may not downgrade the product's safety or performance characteristics. Repair activities may leave potential FOD at or near the repair sites. All maintenance activities must include quality control to assure that repairs are conducted properly and clean-up activities undertaken to remove FOD potential. AC 150/5210-24 provides additional guidance to help manage debris hazards associated with maintenance activities

The first step in rehabilitating or preparing a pavement for repair is to identify the causes of distress. Then, the proper procedures for repairing - which will not only correct the damage, but also prevent or retard its further occurrence - may be applied. Pavement repairs should be made as quickly as possible after the need for them arises to help ensure continued and safe aircraft operations. Airports should perform repairs at early stages of distress, even when the distresses are considered minor. A delay in repairing pavements may allow minor distresses to progress into major failures. While deterioration of pavements due to traffic and adverse weather conditions cannot be completely prevented, maintenance and repair programs can significantly reduce the rate of deterioration and minimize the damage.

Weather conditions may limit repair measures undertaken to prevent further pavement damage. For example, rehabilitation by crack filling is more effective in cool and dry weather conditions, whereas pothole patches, seal coats, and other surface treatments require warm, dry weather for best results. This does not mean that resurfacing work cannot be performed under cold and damp conditions or that crack filling cannot be done in warm weather. Rather, these repairs just require much greater care when made during such periods. The procedures in Appendix A list the weather and temperature limitations for each repair procedure. When emergency pavement repairs are required and weather conditions exceed the procedure recommendations, the initial repair will be temporary and replaced as soon as weather conditions permit.

6.2. Repair methods for flexible pavements.

6.2.1. General. The selection of a repair method for flexible pavements will depend on the type of damage; climate; experience; and availability of materials among others. Table 6-1 summarizes some common problems and potential repair methods.

6.2.2. Crack repair. Cracks take many forms, such as longitudinal, transverse, block, alligator, slippage, and reflection cracks. For some, such as longitudinal and transverse cracks, simple crack filling may be the proper corrective action. Refer to Appendix A1 and Figure A-1 for crack repair in flexible pavement.

6.2.3. Partial and full depth repair. Some cracks may require partial or full depth repair of the damaged pavement. Partial depth repairs may be an alternative for pavements greater than 5 inches (13 cm) thick. Full depth repairs are typically required for pavement less than 5 inches (13 cm) thick. Refer to Appendix A2 and Figure A-2 for partial depth crack repair in flexible pavement. Refer to Appendix A3 and Figure A-3 for full depth crack repair in flexible pavement.

6.3. Repair methods for rigid pavements.

6.3.1. General. The selection of a repair method for rigid pavements will depend on the type of damage, climate, experience, and availability of materials among others. Table 6-2 summarizes some common problems and potential repair methods. Refer to Appendix A4 and Figure A-4 for a plan view of typical rigid pavement full depth repairs including a corner break; partial slab replacement; and full depth slab replacement.

6.3.1.1. Crack repair and joint sealing. Sealing cracks prevents surface moisture from entering the pavement structure. This type of repair may require establishing a sealant reservoir. A concrete saw is preferable to router equipment because a router can cause micro-cracks in the adjacent concrete pavement. Shrinkage cracks are non-structural and non-propagating cracks that are cosmetic and typically do not require repairs.

Refer to AC 150/5370-10, Items P-604 Compression Joint Seals for Concrete Pavements and P-605, Joint Sealants for Concrete Pavements for information and guidance on joint and crack sealants. A silicone sealant per ASTM D5893 can be used for edge joints between flexible and rigid pavements. Silicone should not be used to seal flexible pavement to flexible pavement joints.

6.3.1.2. Full depth repair. Full depth rigid pavement repair requires the complete removal of the damaged concrete pavement. The base and sub base material may also require repair if they are damaged during removal of the pavement or by water infiltration and subsequent pumping action.

a. Corner break. A corner break is a crack that intersects the joints of a slab at a distance less than or equal to one-half the slab length on both sides of the slab, measured from the corner of the slab. The crack extends vertically through the entire slab thickness. Load repetition combined with loss of support and curling stresses cause corner breaks. Refer to Appendix A5 and Figure A-5 for full depth repair of a corner break.

b. Partial slab replacement. Refer to Appendix A6 and Figure A-6 for partial slab replacement procedures.

c. Full slab replacement. Refer to Appendix A7 and Figure A-7 for full slab replacement procedures.

6.3.1.3. Partial depth repair

a. Joint spall repair. Joint spalling is the breakdown of the slab edges within 2 feet (0.6 m) of the side of the joint. A joint spall usually does not extend vertically through the slab,

intersecting the joint at an angle. Refer to Appendix A8 and Figure A-8 for joint spall repair procedures.

6.4. Temporary patching of rigid pavements.

Broken rigid pavement areas can be patched with flexible pavement as an interim measure. Full-depth HMA repairs will interrupt the structural integrity of the rigid pavement and may lead to additional failures. Such full-depth repairs are considered temporary, and corrective long-term repairs must be scheduled.

The minimum depth of repair for portland cement concrete should be 2 inches (5 cm). Repairs made thinner than 2 inches (5 cm) usually deteriorate quickly on an airfield pavement. (Most distresses needing repair will extend at least 2 inches (5 cm) into the pavement.) Rigid pavement repairs that are thinner than 2 inches (5 cm) may benefit from the use of epoxy materials.

Table 6-1. Quick guide for maintenance and repair of common flexible pavement surface problems

Problem	Repair	Probable Cause
Weathering/ Oxidation	- Apply surface treatment - Overlay	- Environment - Lack of timely surface treatments
Cracks	- Remove old sealer material if present - Clean and prepare cracks - Seal/reseal cracks - Joint heating may be an option for longitudinal cracks when under the direction of an engineer. (Operate heaters to avoid excessive heat on the pavement.)	- Age - Environmental conditions - Bitumen too hard or overheated in mix - Sealant defects (e.g., incorrect application temperature, improper sealant selection, improper crack preparation)
Alligator or fatigue cracking	- Remove and replace damaged pavement, including the base and/or subbase course if required.	- Base and/or Subgrade failure - Overload - Under-designed surface course (too thin)
Patches	- Remove/replace. - Repair and Resurface	- Inadequate/Improper repair detail/material - Age
Surface irregularities (e.g., rutting, wash-boarding, birdbaths)	- Remove and replace damaged areas - Surface grinding/milling	- Traffic - Age
Loss of Skid Resistance	- Remove rubber/surface contamination - Apply surface treatment	- Rubber deposits/surface contamination - Polished aggregate - Improper surface treatment
Bleeding	- Blot with sand and remove sand prior to resuming aircraft operations. Excessive bleeding may require removal and replacement of pavement.	- Overly rich mix/low air void content. Bleeding may be a precursor to other surface deformities forming, e.g., rutting, wash-boarding, etc.
Drainage	- Grade pavement shoulders, clear drainage path - Clean out drainage structures, e.g., edge drains, outfalls, etc.	- Poor maintenance of drainage facilities - Poor maintenance of grade

Table 6-2. Quick guide for maintenance and repair of common rigid pavement surface problems

Problem	Repair	Probable Cause
Joint sealant damage	- Remove old sealant, clean joints, reseal	- Age - Environmental conditions - Sealant defects (e.g., incorrect application temperature, improper sealant selection, improper joint preparation)
Cracks	- Clean and seal cracks - Repair/replace slab - Evaluate adequacy of pavement structure; may require strengthening	- Loss of slab support - Load repetition; curling stresses; and shrinkage stresses
Corner Breaks	- Seal and maintain until full depth patch	- Loss of slab support - Load repetition and curling stresses
Joint spalling	- Remove loose material; refill with approved product; reseal - Partial depth repair	- Latent defects, i.e., excessive finishing - Incompressible matter in joint spaces - Snow plow damage
Slab blowup	- Replace slab in blowup area; clean and reseal joints.	- Incompressible material in joints preventing slab from expanding
Loss of Skid Resistance	- Remove rubber/surface contamination. - Grinding.	- Rubber deposits/surface contamination - Age, i.e., surface wear
Drainage	- Grade pavement shoulders, clear drainage path - Clean out drainage structures, e.g., edge drains, outfalls, etc.	- Poor maintenance of drainage facilities - Poor maintenance of grade
Popouts	- Remove FOD	- Material
Patches	- Remove/replace	- Inadequate/Improper repair detail/material - Age

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Appendix A. Repair Procedures

The following typical details and repair procedures are intended for use for minor maintenance repair of airport pavements. For major maintenance projects, the airport should utilize plans and specifications developed under the direction of a pavement design engineer.

For all maintenance and repair projects funded with federal grant monies through the Airport Improvement Program (AIP) and with revenue from the Passenger Facility Charge (PFC) Program, the airport must use the guidelines and specifications for materials and methods in AC 150/5370-10, Standards for Specifying Construction of Airports.

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A1. PROCEDURE FOR CRACK REPAIR OF FLEXIBLE PAVEMENT

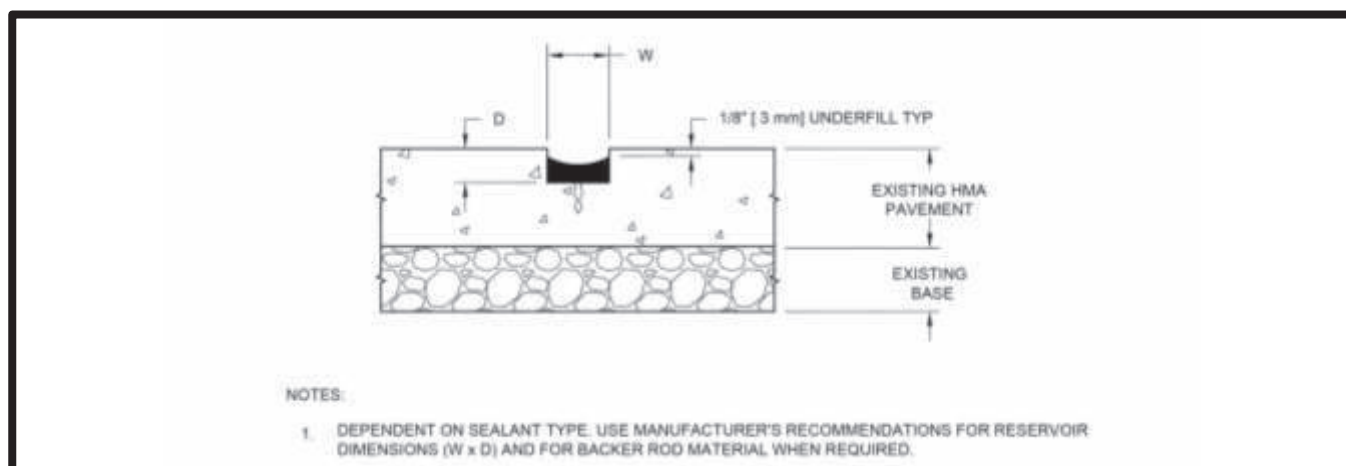


Figure A-1. Crack repair of flexible pavement

WEATHER AND TEMPERATURE REQUIREMENTS

- Do not begin crack repair during inclement weather.
- The pavement temperature should be 50°F (10°C) and rising or meet the manufacturer's recommendations at the time of application of the crack sealing material.
- Do not apply sealant if moisture is observed in the crack.

PREPARATION

To choose sealant:

- Consider your geographic area, climate, and past performance of the sealant
- Hot-applied sealants must meet the requirements of ASTM D6690
- Cold-applied sealants must meet the requirements of ASTM D977

REPAIR PROCEDURE

Use this procedure to repair cracks less than 1 inch (2.5 cm) in width in flexible pavements.

1. Review the construction safety and phasing plan (CSPP). Ensure all pavement closures have all required items in place, such as lighted Xs, barricades, signs, etc.; and all NOTAMS have been issued for affected areas of the airfield.
2. Mark the limits of the area of crack repair.
3. Use an air compressor with an operable oil and water trap to clean all cracks with compressed hot air.
4. If necessary, saw or rout the cracks to the required width and depth. Use the sealant manufacturer's specifications to determine the sealant reservoir dimensions (W × D).
5. Inspect the cracks for proper width, depth, alignment, and preparation. Make sure the crack surface faces are dry.
6. To obtain the width and depth ratio required by the sealant manufacturer's specifications may require installation of backer rod. Make sure the backer rod:
 - Meets the requirements of ASTM D5249
 - Is compatible with the sealant
 - Is 25% larger in diameter than the width of the sealant reservoir
7. Apply the sealant uniformly from the bottom to the top of the crack avoiding voids or entrapping air.
8. Make sure the surface of the sealant remains ¼ inch to ⅜ inch (6 mm to 9 mm) below the existing pavement surface.
9. Do not allow traffic until the sealants have cured.
10. Completely clean the work area before opening to aircraft traffic.

MATERIAL REQUIREMENTS

ASTM D977	Standard Specification for Emulsified Asphalt
ASTM D5249	Standard Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland-Cement Concrete and Asphalt Joints
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

State Department of Transportation specifications for pavements

A2. PARTIAL DEPTH CRACK REPAIR IN FLEXIBLE PAVEMENT

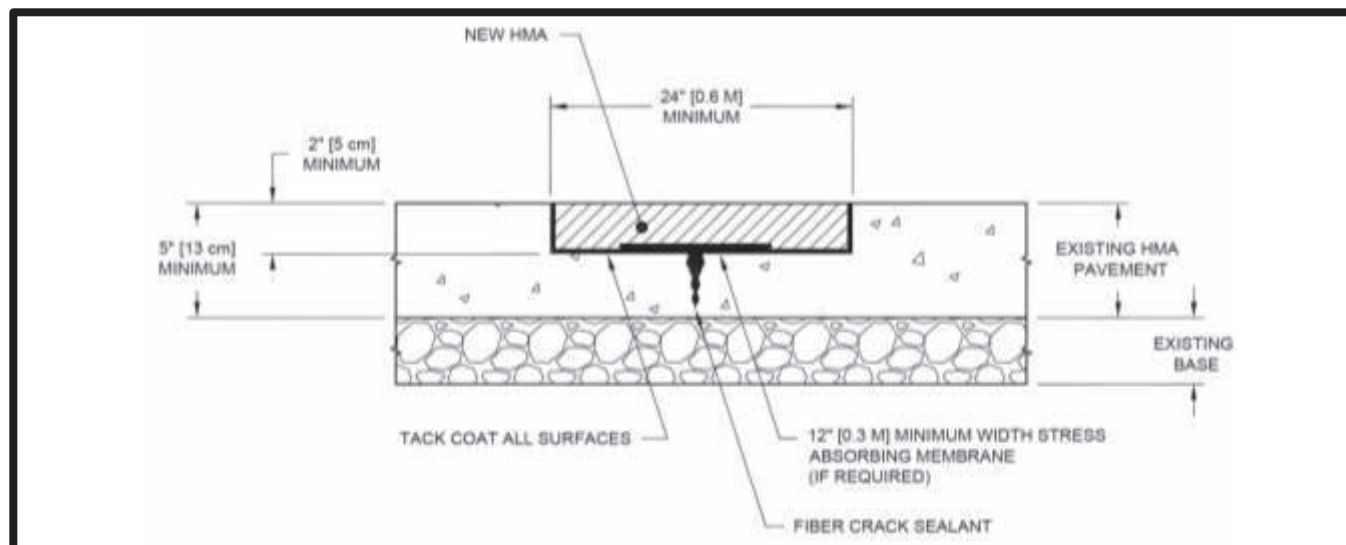


Figure A-2. Partial depth crack repair in flexible pavement

WEATHER AND TEMPERATURE REQUIREMENTS

- Do not begin crack repair during inclement weather.
- HMA should not be placed upon a wet surface or when the surface temperature of the underlying course is less than 45°F (7°C).
- The pavement temperature should be 50°F (10°C) and rising or meet the manufacturer's recommendations at the time of application of the crack sealing material.
- Do not apply sealant if moisture is observed in the crack.

REPAIR PROCEDURE

Use this procedure to repair HMA Pavements that are 5 inches (13 cm) or greater in thickness with cracks greater than 1 inch (2.5 cm).

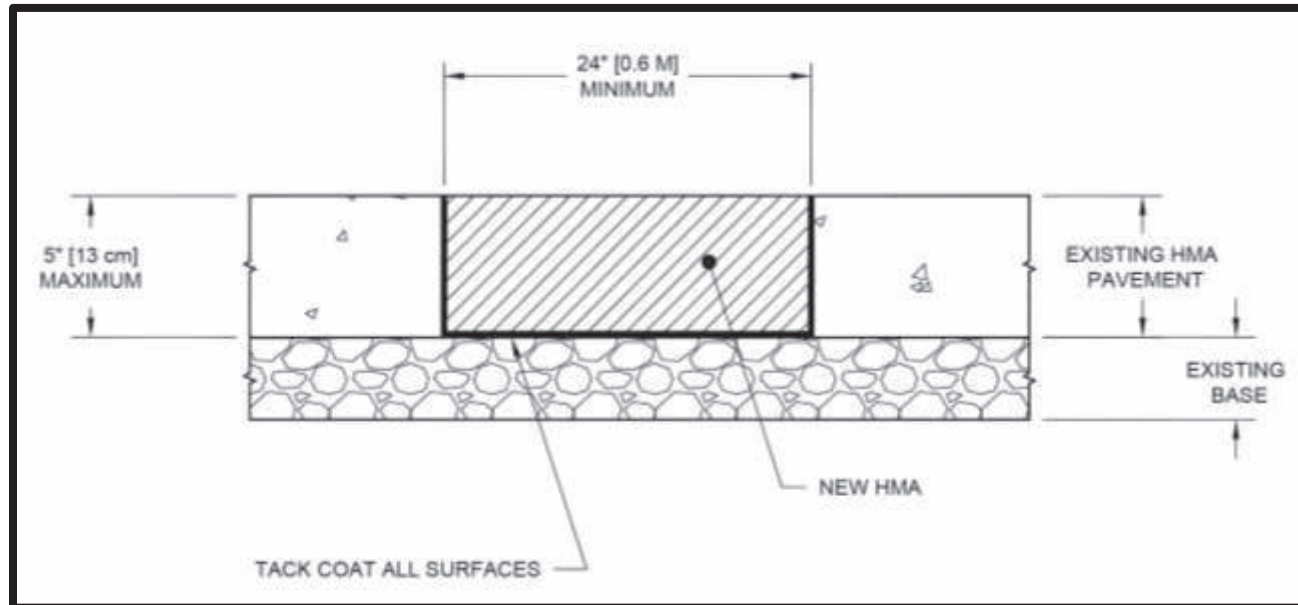
1. Review the construction safety and phasing plan (CSPP). Ensure all pavement closures have all required items in place, such as lighted Xs, barricades, signs, etc.; and all NOTAMS have been issued for affected areas of the airfield.
2. Mark the limits of the area of crack repair.
3. Saw cut or mill out an area 24 inches (0.6 m) wide by 2 to 3 inches (5 to 8 cm) deep centered

on the crack. Extend the saw cut or mill out the area a minimum of 12 inches (30 cm) beyond the limits of the distressed pavement area.

4. Use an air compressor with an operable oil and water trap to clean all cracks with compressed hot air.
5. Fill the crack flush with fiber crack filler per the sealant manufacturer's specifications. Apply the sealant uniformly from the bottom to the top of the crack avoiding voids or entrapping air.
6. Apply a 12 inch (30 cm) repair membrane centered over the crack. (Installation of the membrane is optional.)
7. Apply a tack coat to the bottom and sides of the repair area. Make sure the tack meets the requirements of P-603 and ASTM D3628.
8. Fill the patch area with HMA equivalent or better than the existing pavement. Use P-401, P-403 or equivalent State DOT dense mix and compact to the minimum density specified.
9. Use a straight-edge to verify the patch is flush with adjacent pavement.
10. Do not allow traffic until the HMA has cured.
11. Completely clean the work area before opening to aircraft traffic.

MATERIAL REQUIREMENTS

ASTM D977	Standard Specification for Emulsified Asphalt
ASTM D3628	Standard Practice for Selection and Use of Emulsified Asphalts
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
P-401	Hot Mix Asphalt (HMA) Pavements, AC 150/5370-10, Standards for Specifying Construction of Airports
P-403	Hot Mix Asphalt (HMA) Pavements (Base, Leveling, or Surface Course), AC 150/5370-10, Standards for Specifying Construction of Airports
State Department of Transportation specifications for pavements	

A3. FULL DEPTH CRACK REPAIR IN FLEXIBLE PAVEMENT**Figure A-3. Full depth crack repair in flexible pavement****WEATHER AND TEMPERATURE REQUIREMENTS**

- Do not begin crack repair during inclement weather.
- HMA should not be placed upon a wet surface or when the surface temperature of the underlying course is less than 45°F (7°C).

REPAIR PROCEDURE

Use this procedure to conduct full depth repairs of flexible pavements and to repair cracks greater than 1 inch (2.5 cm) in flexible pavements 5 inches (13 cm) or less in thickness.

1. Review the construction safety and phasing plan (CSPP). Ensure all pavement closures have all required items in place, such as lighted Xs, barricades, etc.; and all NOTAMS have been issued for affected areas of the airfield.
2. Mark the limits of the area of crack repair.
3. Saw cut or mill out an area 24 inches (0.6 m) wide to the full depth of the HMA centered on the crack. Extend the saw cut or mill out an area a minimum of 12 inches (30 cm) beyond the limits of the distressed pavement area.
4. Repair and re-compact the base as necessary.
5. Apply a tack coat to the bottom and sides of the repair area. Make sure the tack meets the requirements of P-603 and ASTM D3628.
6. Fill the patch area with HMA equivalent to or better than the existing pavement. Use P-401, P-403 or equivalent State DOT dense mix and compact to the minimum density specified.
7. Use a straight-edge to verify that the patch is flush with adjacent pavement.
8. Do not allow traffic until HMA has cured.
9. Completely clean the work area before opening to aircraft traffic.

MATERIAL REQUIREMENTS

ASTM D977	Standard Specification for Emulsified Asphalt
ASTM D3628	Standard Practice for Selection and Use of Emulsified Asphalts
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
P-401	Hot Mix Asphalt (HMA) Pavements, AC 150/5370-10, Standards for Specifying Construction of Airports
P-403	Hot Mix Asphalt (HMA) Pavements (Base, Leveling, or Surface Course), AC 150/5370-10, Standards for Specifying Construction of Airports
P-603	Bituminous Tack Coat, AC 150/5370-10, Standards for Specifying Construction of Airports

State Department of Transportation specifications for pavements

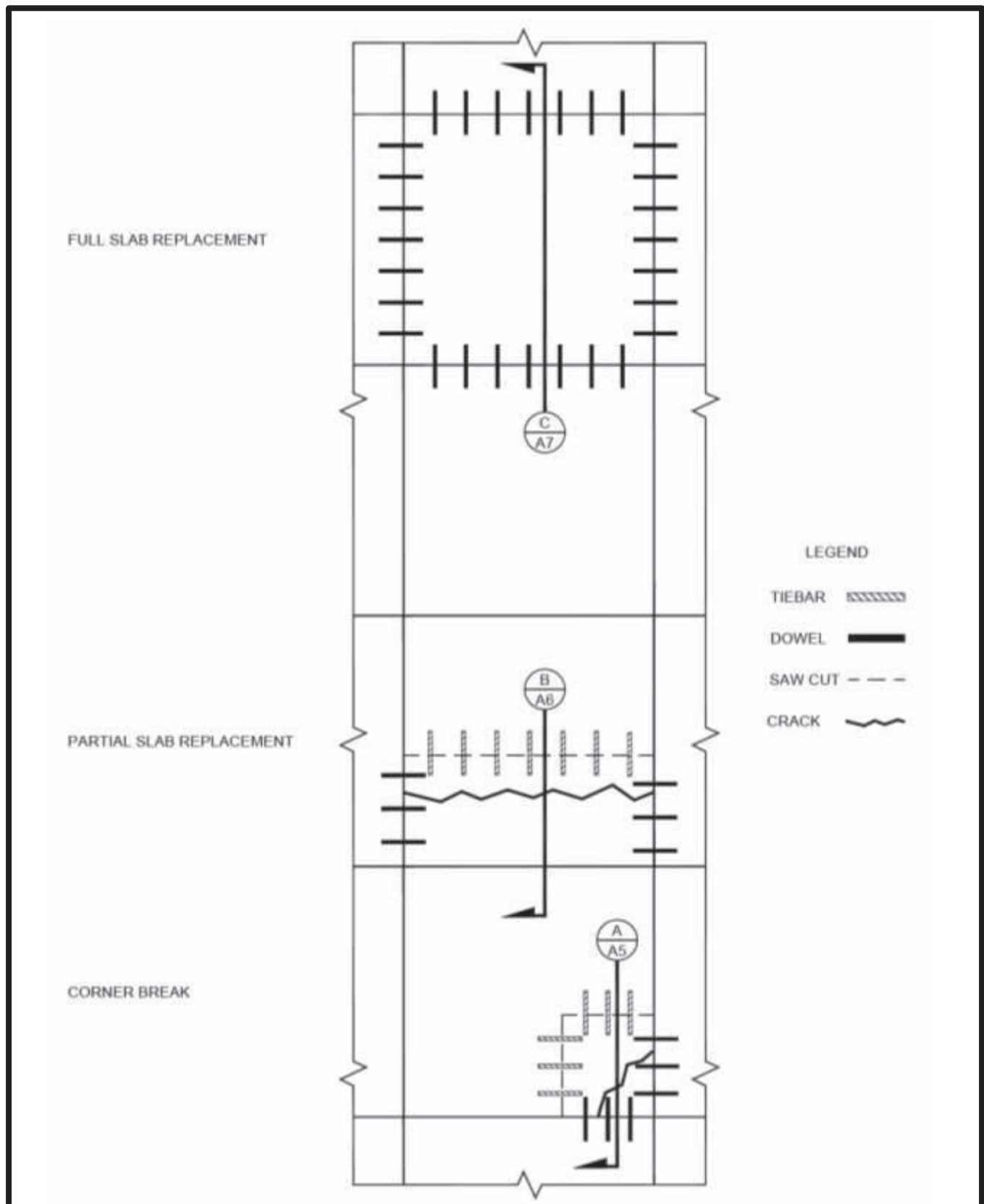
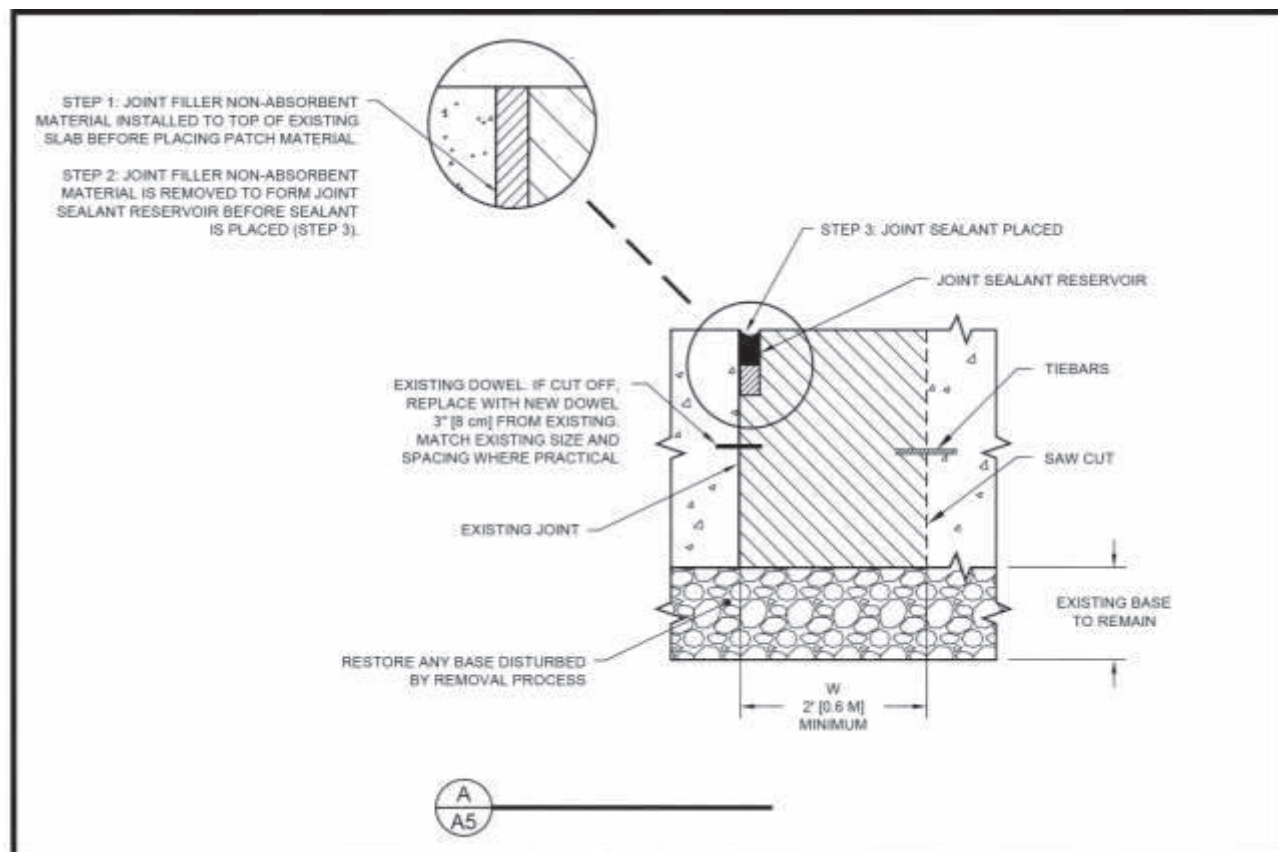
A4. RIGID PAVEMENT REPAIR – PLAN VIEW

Figure A-4. Rigid pavement repair – plan view

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A5. FULL DEPTH REPAIR IN RIGID PAVEMENT – CORNER BREAK**Figure A-5. Full depth repair in rigid pavement – corner break**

Repair Procedure and Weather and Temperature Requirements are on the back of this page.

MATERIAL REQUIREMENTS

ASTM A1078	Standard Specification for Epoxy-Coated Steel Dowels for Concrete Pavement
ASTM A615	Standard Specifications for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
P-501	Portland Cement Concrete (PCC) Pavement, AC 150/5370-10, Standards for Specifying Construction of Airports
State Department of Transportation specifications for pavements	

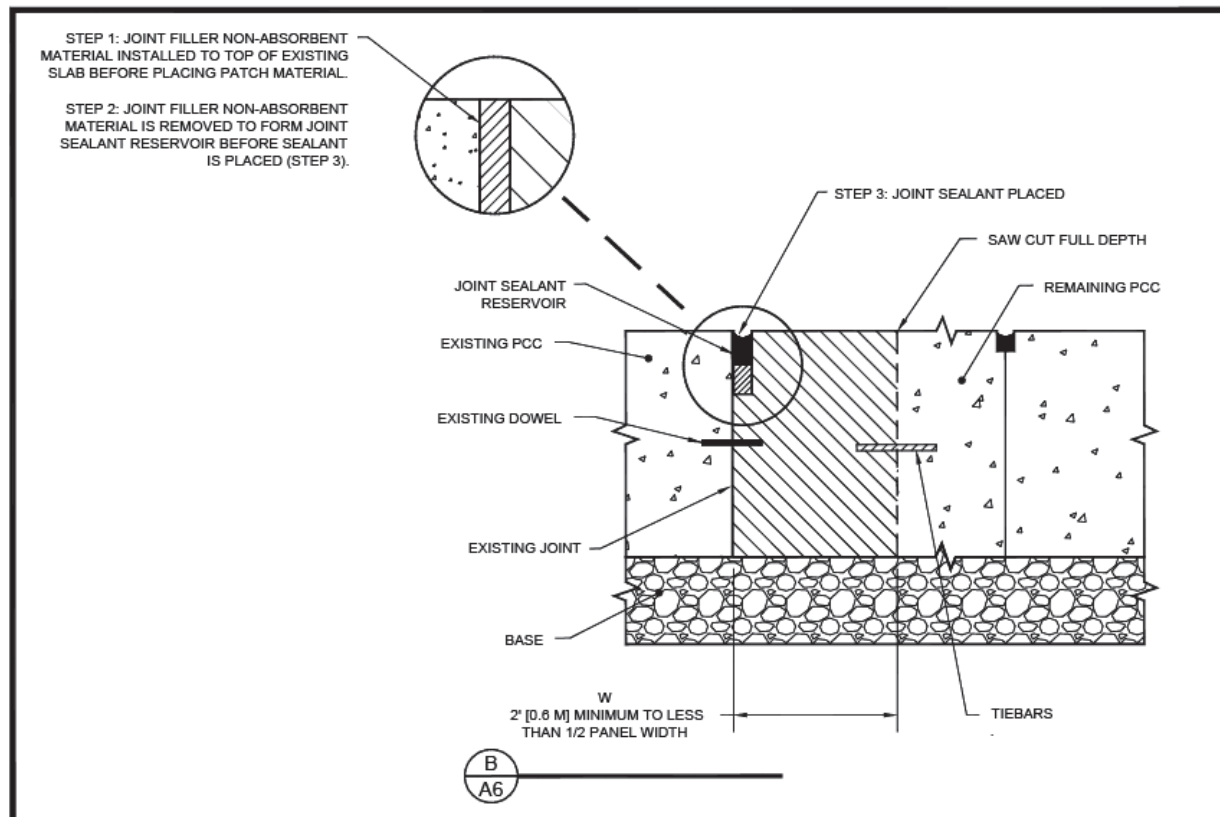
WEATHER AND TEMPERATURE REQUIREMENTS

- Do not begin repairs during inclement weather.
- Do not place concrete unless the ambient temperature is at least 40°F (4°C) and rising and the concrete temperature is greater than or equal to 50°F (10°C).
- Do not place concrete on frozen base, ice, or snow.
- When the ambient temperature exceeds 85°F (29°C), sprinkle the adjacent concrete and base with water immediately before placing concrete.
- Place concrete at the coolest temperature practicable, and never allow the placed concrete temperature to exceed 90°F (32°C).

REPAIR PROCEDURE

1. Review the construction safety and phasing plan (CSPP). Ensure all pavement closures have all required items in place, such as lighted Xs, barricades, etc.; and all NOTAMS have been issued for affected areas of the airfield.
2. Mark the limits of the area to be repaired. For corner breaks the repair area should be square.
3. Make a full-depth saw cut along the constructed joints at least 2 feet (0.6 m) beyond the limits of the break and make saw cuts perpendicular to the constructed joints from these points until they intersect. See Figure A-4.
4. If dowels or tie bars are present along any edges, either of the following options is acceptable:
 - If dowels or tie bars will be exposed and saved, saw edges full depth just beyond the end of the dowels or tie bars. Carefully saw joints on the joint line to within 1 inch (2.5 cm) of the depth of the dowel or tie bar. Use light 30 pound (14 kg) or less jackhammers or other approved equipment to carefully break up and remove the narrow strips of concrete along the doweled edges.
 - If dowel or tie bars are cut and replaced, make a full depth saw cut along the constructed joint cutting the dowels and tie bars.
5. Take care to prevent damage to remaining dowels, tie bars, or concrete.

6. Use light weight equipment, i.e., jackhammers less than 30 pounds (14 kg), hand tools, etc., to remove the remaining damaged PCC pavement. Work from inside the saw cut toward the edge of the slab of the area being removed to prevent damage to the pavement remaining.
7. Remove by hand all loose material and vacuum to minimize any disturbance to the subgrade or base materials.
8. Restore subgrade or base material if required.
9. Install deformed tie-bars in each face of the parent panel by drilling horizontal holes into the face and using an epoxy bonding agent.
10. If existing dowel bars have been cut and removed, install new dowel bars of the type and size of the existing dowel bars in the joint that parallels the direction of traffic. On aprons and areas where traffic may be oblique to joints, install dowels in both joint faces.
11. Install dowels by drilling and epoxying into the PCC pavement at least 3 inches (8 cm) from the location of the existing dowels which were cut off. Space dowel bars at least 3 inches (8 cm) from the edge of the repair area and at least one bar spacing apart at corners of intersecting joints.
12. Oil the exposed ends of dowel bars prior to backfilling the repair area with concrete.
13. Install nonabsorbent board or other approved material within the limits of the joint seal reservoir (Step 1). The nonabsorbent board will be a standard ½ inch (13 mm) asphalt impregnated fiber-board or other approved material. For joints wider than ½ inch (13 mm), adjust the width of the nonabsorbent board to fit the joint width.
14. Fill the repair area with concrete and consolidate with a vibrator. Concrete should meet the requirements of P-501 or State DOT specifications for pavements.
15. Finish the surface to match existing pavement.
16. Spray with curing compound per ASTM C309.
17. Remove the nonabsorbent board (Step 2) and place joint sealant per ASTM D6690 and manufacturer's requirements (Step 3).
18. Do not allow traffic until the patch has cured.
19. Completely clean the work area before opening the pavement to aircraft traffic.

A6. FULL DEPTH REPAIR IN RIGID PAVEMENT – PARTIAL SLAB REPLACEMENT**Figure A-6. Full depth repair in rigid pavement – partial slab replacement**

Repair Procedure and Weather and Temperature Requirements are on the back of this page.

MATERIAL REQUIREMENTS

ASTM A1078	Standard Specification for Epoxy-Coated Steel Dowels for Concrete Pavement
ASTM A615	Standard Specifications for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
P-501	Portland Cement Concrete (PCC) Pavement, AC 150/5370-10, Standards for Specifying Construction of Airports
State Department of Transportation specifications for pavements	

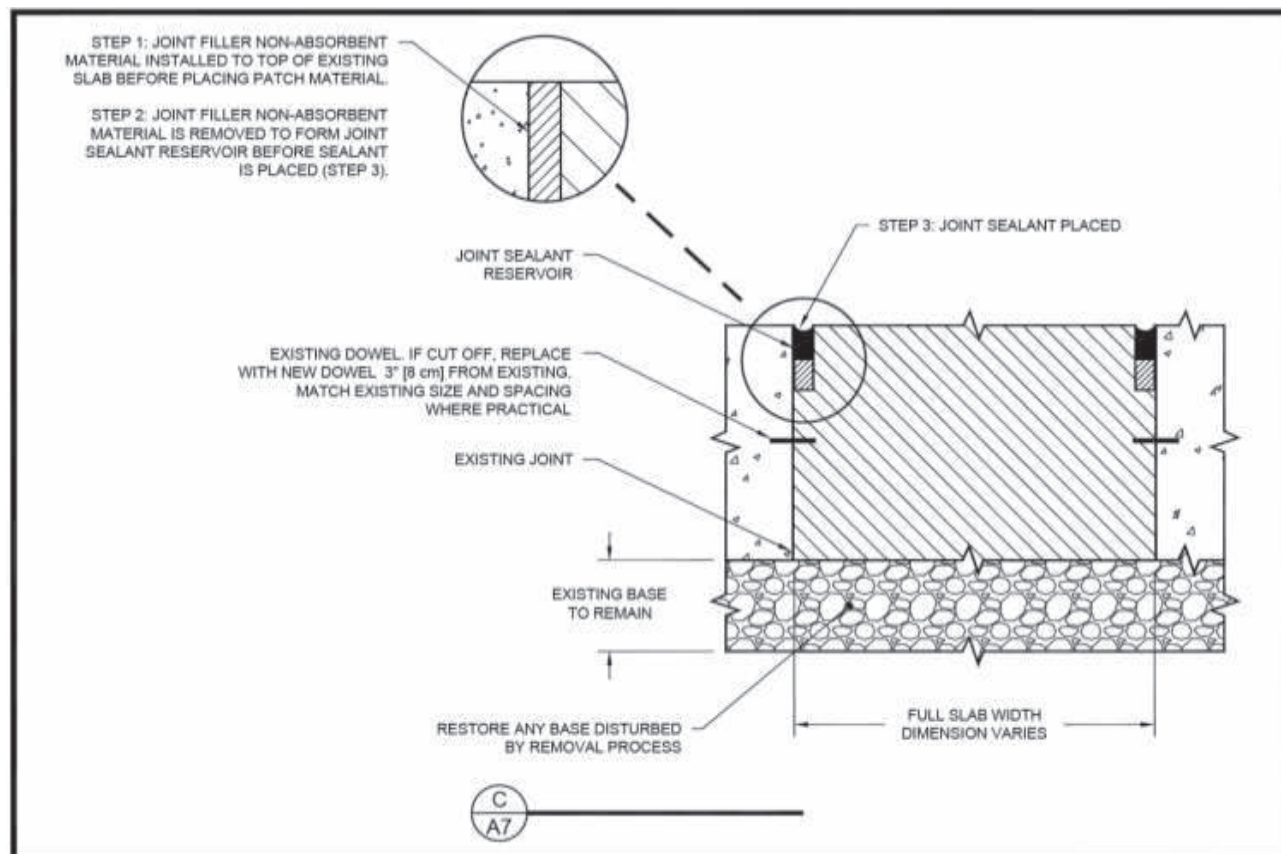
WEATHER AND TEMPERATURE REQUIREMENTS

- Do not begin repairs during inclement weather.
- Do not place concrete unless the ambient temperature is at least 40°F (4°C) and rising and the concrete temperature is greater than or equal to 50°F (10°C).
- Do not place concrete on frozen base, ice, or snow.
- When the ambient temperature exceeds 85°F (29°C), sprinkle the adjacent concrete and base with water immediately before placing concrete.
- Place concrete at the coolest temperature practicable, and never allow the placed concrete temperature to exceed 90°F (32°C).

REPAIR PROCEDURE

1. Review the construction safety and phasing plan (CSPP). Ensure all pavement closures have all required items in place, such as lighted Xs, barricades, etc.; and all NOTAMS have been issued for affected areas of the airfield.
2. Mark the limits of the area to be repaired.
3. Make a full-depth saw cut along the constructed joints at least 2 feet (0.6 m) beyond the limits of the damaged pavement and make a saw cut perpendicular to the constructed joints from these points across the width of the pavement panel. See Figure A-4.
4. If dowels or tie bars are present along any edges, either of the following options is acceptable:
 - If dowels or tie bars will be exposed and saved, saw edges full depth just beyond the end of the dowels or tie bars. Carefully saw joints on the joint line to within 1 inch (2.5 cm) of the depth of the dowel or tie bar. Carefully break up and remove the narrow strips of concrete along doweled edges using light 30 pound (14 kg) or less jackhammers, or other approved equipment.
 - If dowels or tie bars are to be cut and replaced, make a full depth saw cut along the constructed joint cutting the dowels and tie bars.
5. Take care to prevent damage to the dowels, tie bars, or to concrete that remains in place.

6. Make additional saw cuts within the limits of the repair area, dividing the repair area into quarters.
7. Use light weight equipment, i.e., jackhammers less than 30 pounds (14 kg), hand tools, etc., to remove the damaged PCC pavement. Work from inside the saw cut toward the interior of the area being removed to prevent damage to the pavement remaining.
8. Remove by hand all loose material and vacuum to minimize any disturbance to the subgrade or base materials.
9. Restore subgrade or base material if required.
10. Install deformed tie-bars in the face of the parent panel by drilling horizontal holes in to the face and using an epoxy bonding agent.
11. If existing dowel bars have been cut and removed, install dowel bars of the type and size of the existing dowel bars in the joints that are parallel to the direction of traffic. On aprons and areas where traffic may be oblique to joints, install dowels in both joint faces.
12. Install dowels by drilling and epoxying into the PCC pavement at least 3 inches (8 cm) from the location of the existing cut dowels. Space dowel bars at least 3 inches (8 cm) from the edge of the repair area and at least one bar spacing apart at corners of intersecting joints.
13. Oil the exposed ends of dowel bars prior to backfilling repair area with concrete.
14. Install nonabsorbent board or other approved material within the limits of the joint seal reservoir (Step 1). The nonabsorbent board will be a standard ½ inch (13 mm) asphalt impregnated fiber-board. For joints wider than ½ inch (13 mm), adjust the width of the nonabsorbent board to fit the joint width.
15. Fill the repair area with concrete and consolidate with a vibrator. Use concrete meeting the requirements of P-501 or State DOT specifications for pavements.
16. Finish the surface to match the existing surface.
17. Spray with curing compound per ASTM C309.
18. Remove the nonabsorbent board or other approved material (Step 2) and place joint sealant per ASTM D6690 (Step 3).
19. Thoroughly clean the work area before opening the pavement to aircraft traffic.
20. Do not allow traffic until the concrete has cured.

A7. FULL DEPTH REPAIR IN RIGID PAVEMENT – FULL SLAB REPLACEMENT**Figure A-7. Full depth repair in rigid pavement – full slab replacement**

Repair Procedure and Weather and Temperature Requirements are on the back of this page.

MATERIAL REQUIREMENTS

ASTM A1078	Standard Specification for Epoxy-Coated Steel Dowels for Concrete Pavement
ASTM A615	Standard Specifications for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
P-501	Portland Cement Concrete (PCC) Pavement, AC 150/5370-10, Standards for Specifying Construction of Airports

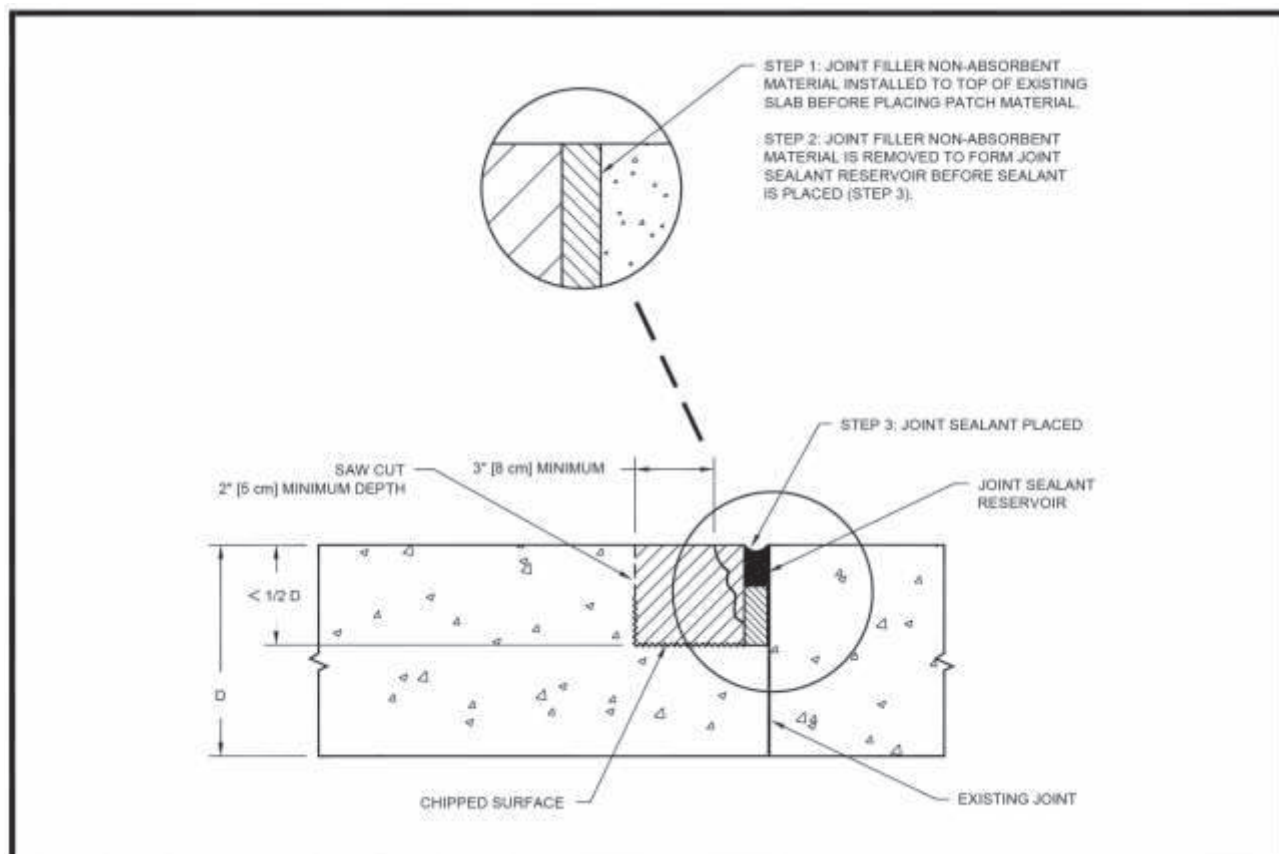
State Department of Transportation specifications for pavements

WEATHER AND TEMPERATURE REQUIREMENTS

- Do not begin repairs during inclement weather.
- Do not place concrete unless the ambient temperature is at least 40°F (4°C) and rising and the concrete temperature is greater than or equal to 50°F (10°C).
- Do not place concrete on frozen base, ice, or snow.
- When the ambient temperature exceeds 85°F (29°C), sprinkle the adjacent concrete and base with water immediately before placing concrete.
- Place concrete at the coolest temperature practicable, and never allow the placed concrete temperature to exceed 90°F (32°C).

REPAIR PROCEDURE

1. Review the construction safety and phasing plan (CSPP). Ensure all pavement closures have all required items in place, such as lighted Xs, barricades, etc.; and all NOTAMS have been issued for affected areas of the airfield.
2. Mark the limits of the area to be repaired.
3. Make a full-depth saw cut along the constructed joints at least 2 feet (0.6 m) beyond the limits of the damaged pavement and make a saw cut perpendicular to the constructed joints from these points across the width of the pavement panel.
4. If dowels or tie bars are present along any edges, either of the following options is acceptable:
 - If dowels or tie bars will be exposed and saved, edges will be sawed full depth just beyond the end of the dowels or tie bars. Carefully saw joints on the joint line to within 1 inch (2.5 cm) of the depth of the dowel or tie bar. Carefully break up the narrow strips of concrete along doweled edges using light 30 pound (14 kg) or less jackhammers, or other approved equipment.
 - If dowels or tie bars are to be cut and replaced, make a full depth saw cut along the constructed joint cutting the dowels and tie bars.
5. Take care to prevent damage to the dowels, tie bars, or to concrete that remains in place.
6. Make additional saw cuts within the limits of the repair area dividing the repair area into quarters.
7. Use light weight equipment, i.e., jackhammers less than 30 pounds (14 kg), hand tools, etc., to remove the damaged PCC pavement. Work from inside the saw cut toward the interior of the area being removed to prevent damage to the pavement remaining.
8. Remove by hand all loose material and vacuum to minimize any disturbance to the subgrade or base materials.
9. Restore subgrade or base material if required.
10. If existing dowel bars have been cut and removed, install dowel bars of the type and size of the existing dowel bars in the joints that are parallel to the direction of traffic. On aprons and areas where traffic may be oblique to joints, install dowels in both joint faces.
11. Install dowels by drilling and epoxying into the PCC pavement at least 3 inches (8 cm) from the location of the existing dowels which were cut off. Space dowel bars at least 3 inches (8 cm) from the edge of the repair area and at least one bar spacing apart at corners of intersecting joints.
12. Oil the exposed ends of dowel bars prior to backfilling repair area with concrete.
13. Install nonabsorbent board or other approved material within the limits of the joint seal reservoir (Step 1). The nonabsorbent board will be a standard ½ inch (13 mm) asphalt impregnated fiber-board. For joints wider than ½ inch (13 mm), adjust the width of the nonabsorbent board to fit the joint width.
14. Fill the repair area with concrete and consolidate with a vibrator. Use concrete meeting the requirements of P-501 or State DOT specifications for pavements.
15. Finish the surface to match the existing surface.
16. Spray with curing compound per ASTM C309.
17. Remove the nonabsorbent board or other approved material (Step 2) and place joint sealant per ASTM D6690 (Step 3).
18. Thoroughly clean the work area before opening the pavement to aircraft traffic.
19. Do not allow traffic until the concrete has cured.

A8. JOINT SPALL REPAIR IN RIGID PAVEMENT**Figure A-8. Joint spall repair in rigid pavement**

Repair Procedure and Weather and Temperature Requirements are on the back of this page.

MATERIAL REQUIREMENTS

ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C881	Standard Specifications for Epoxy-Resin-Base Bonding Systems for Concrete
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
P-501	Portland Cement Concrete (PCC) Pavement, AC 150/5370-10, Standards for Specifying Construction of Airports

State Department of Transportation specifications for pavements

WEATHER AND TEMPERATURE REQUIREMENTS

- Do not begin repairs during inclement weather.
- Do not place concrete unless the ambient temperature is at least 40°F (4°C) and rising and the concrete temperature is greater than or equal to 50°F (10°C).
- Do not place concrete on frozen base, ice, or snow.
- When the ambient temperature exceeds 85°F (29°C), sprinkle the adjacent concrete and base with water immediately before placing concrete.
- Place concrete at the coolest temperature practicable, and never allow the placed concrete temperature to exceed 90°F (32°C).

REPAIR PROCEDURE

1. Review the construction safety and phasing plan (CSPP). Ensure all pavement closures have all required items in place, such as lighted Xs, barricades, etc.; and all NOTAMS have been issued for affected areas of the airfield.
2. Mark the limits of the area of spall repair.
3. Make vertical saw cuts a minimum of 2 inches (5 cm) in depth and approximately 3 inches (8 cm) beyond the limit of the spall area. Saw cuts should be straight lines defining the perimeter of the spall repair area. The spall repair area should be a rectangular area.
4. When there are adjacent spall repair areas within a slab, the minimum distance between spall repair areas is 1-1/2 feet (45 cm). When spall repair areas are less than 1-1/2 feet (45 cm) apart, combine the spall repair areas into one repair. When the spall repair areas are greater than 1-1/2 feet (45 cm) apart, maintain separate spall repair areas.
5. Chip out and remove all unsound concrete and at least ½ inch (13 mm) of visually sound concrete between the saw cut and the joint, or crack.
6. Use light weight equipment, i.e., jackhammers less than 30 pounds (14 kg), hand tools, etc., to remove the damaged PCC pavement. Work from inside the saw cut toward the joint to prevent damage to the remaining pavement.
7. Remove all loose material by hand and vacuum to minimize any damage to the remaining pavement.
8. Clean the spall repair area with high-pressure water.
9. Place nonabsorbent board or other approved material (Step 1) in the existing joint and form a new joint sealant reservoir adjacent to the repair area. Maintain the joint through the full depth of the spall repair and prevent a bond between the patch and the adjacent slab.
10. Prepare the surface of the joint repair area in accordance with the manufacturer's recommendations for the material used for the repair. This may require treating the surface of the spall repair with a neat cement grout or a liquid bonding agent.
11. Place the patch.
12. Finish the patch to match the texture of the adjacent pavement.
13. Cure the patch in accordance with the material manufacturer's recommendations.
14. Remove the nonabsorbent board or other approved material from the joint (Step 2) and place joint sealant per ASTM D6690 (Step 3).
15. Protect the patch from traffic until the material has set.
16. Thoroughly clean the work area before opening the pavement to aircraft traffic.

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