

**CONTRACT DOCUMENTS  
AND  
SPECIFICATIONS  
FOR  
AIRFIELD ELECTRICAL REHABILITATION  
AT THE  
DALTON MUNICIPAL AIRPORT  
DALTON, GEORGIA**

**GDOT Project No. AP02X-XXXX-XX(XXX) Whitfield County  
PID T008974**

**Croy Engineering Project No. 2106.006  
ISSUED FOR CONSTRUCTION**



**CROY ENGINEERING  
200 North Cobb Parkway, Suite 413  
Marietta, Georgia 30062**

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ADDENDUM NO. 1  
TO  
CONTRACT DOCUMENTS AND SPECIFICATIONS FOR  
**AIRFIELD ELECTRICAL REHABILITATION**  
**Dalton Municipal Airport (DNN), Dalton, Georgia**  
Croy Engineering Project No. 2106.006

Date Addendum Issued:  
April 14, 2025

Bid Opening Date:  
April 23, 2025

TO ALL BIDDERS: The original contract documents for the above reference project are amended as noted herein. This Addendum hereby becomes a part of said contract documents. Acknowledge receipt of this Addendum in the space provided in the bid package. Insofar as those documents are at variance with this Addendum, this Addendum will govern.

**General:**

This addendum consists of the meeting minutes from the Pre-Bid Meeting held on April 8, 2025, at the airport terminal.

**Attachments:**

**Pre-Bid Meeting Minutes.pdf**  
Pre-Bid Meeting Minutes

**No questions have been received to date.**

**END OF ADDENDUM NO. 1  
THIS ADDENDUM MUST BE ACKNOWLEDGED IN BID**

# PRE-BID MEETING MINUTES

## AIRFIELD ELECTRICAL REHABILITATION

### Dalton Municipal Airport, Dalton, Georgia

Tuesday, April 8<sup>th</sup> at 11:00 A.M. EDT  
Airport Terminal Conference Room

#### Part 1: INTRODUCTIONS

#### Part 1I: PROJECT TEAM

Project Owner: City of Dalton  
Andrew Wiersma, Airport Manager  
Danny Morgan, Airport Authority Chairman

Contact: Andrew Wiersma, Airport Manager  
Dalton Municipal Airport  
4483 Airport Road  
Dalton, GA 30721  
Cell: (706) 618-4384  
Email: [awiersma@daltonga.gov](mailto:awiersma@daltonga.gov)

Project Engineer: Kimley-Horn and Associates  
Rebecca Collins, Project Manager  
Sam Malte, Project Engineer

Contact: Sam Malte, Project Engineer  
Kimley-Horn and Associates  
11720 Amber Park Drive, Suite 600  
Alpharetta, GA 30009  
Office: (770) 619-4280  
Direct: (770) 557-6960  
Email: [Sam.Malte@kimley-horn.com](mailto:Sam.Malte@kimley-horn.com)

Project Oversight: Georgia Department of Transportation –  
Division of Intermodal  
Damon Carr, Aviation Project Manager

Contact: Damon Carr, Aviation Project Manager



Georgia Department of Transportation –  
Division of Intermodal  
600 West Peachtree Street NW, 6<sup>th</sup> Floor  
Atlanta, GA 30308  
Office: (404) 347-0579  
Direct: (470) 715-5494  
Email: [DaCarr@dot.ga.gov](mailto:DaCarr@dot.ga.gov)

### Part 1II: PROJECT SCOPE

This project consists of one Base Bid consisting of two Schedules (Runway and Taxiway) and three Additive Bids. The scope of work for these bid schedules include the following major work items:

#### BASE BID

1. Remove and replace HIRL, MITL, REILs and Airfield Signage in place on existing bases.
2. Remove and replace Rotating Beacon.
3. Remove and replace Runway 14 and 32 four-box PAPI.
4. Remove and replace Wind Cone and rehabilitate Segmented Circle.

#### ADDITIVE BID NO. 1 AND 2 – ALTERNATE LAYOUT 1 (SCHEDULE A AND B)

1. Alternate 1 contains all of the work items from the Base Bid, but runway and taxiway lighting, signage and circuitry layout for existing airport conditions will be brought to meet layout standards of FAA AC 150/5340-30J design standards.
2. Removal of 10 runway edge light bases, 75 taxiway edge light bases and 2 sign bases.
3. Installation of 10 new runway edge light bases, 100 edge light bases and 2 sign bases over Base Bid.

#### ADDITIVE BID NO. 3 – ALTERNATE LAYOUT 2 (SCHEDULE B)

1. Alternate 2 contains all of the work items from the Base Bid, but runway and taxiway lighting, signage and circuitry layout will account for future fillet widenings and taxiway relocation designed to meet current FAA AC 150/5340-30J design standards.
2. Removal of 110 taxiway edge lights and bases.
3. Installation of 148 new taxiway edge light bases and 40 additional taxiway light fixtures over Base Bid.

Note: A pre-construction meeting will be held onsite prior to commencement of activities. Engineer shall schedule and contact all attendees to include, but not limited to, owner, agency representatives, contractors, and subcontractors.

## Part IV: PROJECT SCHEDULE

1. Sealed bids will be received by the Dalton Municipal Airport Authority at the Dalton Municipal Airport by Andrew Wiersma, Airport Manager, 300 W. Waugh Street, Dalton, GA, 30720 on April 23<sup>rd</sup>, 2025, until 2:00 PM Local Time at which time all bids received will be publicly opened and read aloud for the improvement to the Airport as listed herein. Bids received after the bid opening will not be accepted. A summary of the amounts of the Bids will be made available to Bidders within seven (7) days after the date of the Bid opening.
2. Bids will be required to remain open for acceptance or rejection for one-hundred and twenty (120) calendar days after the date of opening of bids.
3. A Notice to Proceed is anticipated to be issued in Fall 2025.
4. Contract Time is 60 calendar days for the completion of work items.
5. Form 7460 – Notice of Construction was filed with the FAA on March 24<sup>th</sup>, 2025.

## Part V: PROJECT BIDDING/CONTRACT REQUIREMENTS

1. Bidder may request a complete electronic copy of the Bidding Documents and join the Plan Holders List by email to the Engineer:
  - Sam Malte at [Sam.Malte@kimley-horn.com](mailto:Sam.Malte@kimley-horn.com)

No prints or sets of drawings will be issued by the Owner. Cost of reproduction for printing shall be paid by the Bidder. All Bidders must be on the plan holders list in order to be considered for work on the project. Addenda and additional information will only be provided to those contractors on the plan holders list.
2. All questions about the meaning or intent of the Bidding Documents are to be submitted by email to Sam Malte at [Sam.Malte@kimley-horn.com](mailto:Sam.Malte@kimley-horn.com). The deadline for submission of questions is five (5) days (weekends and holidays not included) prior to receipt of proposals.
3. Bids must be sealed envelopes with the bidder's name, full mailing address, and General Contractor License Number shown as the return address. Sealed envelopes shall be marked as follows: "BID ENCLOSED – *Airfield Electrical Rehabilitation, Dalton Municipal Airport, Dalton, Georgia*. Croy Engineering Project 2106.006." All submittals shall contain three (3) hard copies and one (1) electronic PDF on a storage device containing all information requested and mailed or hand delivered prior to the bid opening date and time to:

City of Dalton  
Andrew Wiersma, Airport Manager  
300 W. Waugh Street  
Dalton, GA 30720

4. All Bidders must have a current valid license from the State Licensing Board for Residential and General Contractors, unless specifically exempted from holding such license pursuant to Georgia law, O.C.G.A. Section 43-41-17. Only bids of such Contractors who are licensed prior to the date of bid opening will be considered. Bidder must place his/her current license number on the outside of his/her sealed bid or otherwise Bidder's bid shall be rejected. Any bid received after the scheduled closing time for receipt of bids will be returned to the bidder unopened. Please note that bids will only be considered by those bidders and subcontractors currently pre-qualified with the Georgia Department of Transportation.
5. The Checklist for Bid Documents must be reviewed, and the bidder is to comply with the order of the submittal of documents. The completed checklist shall be included with the bid.
6. A 5% Bid Bond is required for the Total Bid Amount and shall be submitted as part of the bid package. A 100% performance bond and a 100% payment bond will be required of the Contractor at time of contract execution.
7. The overall goal for DBE participation is a minimum of 7.28% of the dollar value of this contract, including alternates and change orders.
  - a. All DBEs utilized within submitted bids must be approved and listed with the GDOT Unified Certification Program (UCP) prior to the bid opening in order for the bid to be considered fully responsive.
8. Liquidated damages for delay in completion shall be paid to the Owner at a rate of Five Hundred Dollars (\$500) per calendar day.
9. All Change Orders shall be approved and executed prior to beginning work on the Change Order.
10. 10% retainage will be withheld until project completion.
11. Bid Submittal Forms, Certifications and Requirements are listed below:
  - a. Bid Proposal
  - b. Bid Proposal Form
  - c. Designation of Subcontractors and Suppliers

- d. Bid Proposal Guarantee (5%) or Bid Proposal Guarantee Bond (5%)
- e. Certificate of Corporate Bidder or Certificate of Authority for Limited Liability Corporation, Partnership or Sole Owner
- f. Bidder's Qualification Statement
- g. Disadvantaged Business Enterprise Forms, including Good Faith Efforts (if applicable)
- h. Bidder Compliance Statement/Certification Regarding Equal Employment Opportunity
- i. Buy American Certification
- j. Certification of Non-Segregated Facilities – 41 CFR Part 60
- k. Certification Regarding Debarment and Suspension (Non-procurement)
- l. Non-Collusive Bidding Certification
- m. Construction Safety and Phasing Plan (CSPP) Compliance Certification
- n. Contractor – Georgia Security and Immigration Compliance Act Affidavit and Agreement
- o. Subcontractor – Affidavit under O.C.G.A. § 13-10-91(b)(3)
- p. SAVE Affidavit
- q. Trade Restriction Certification
- r. Certification Regarding Lobbying
- s. Certification of Bidder Regarding Tax Delinquency and Felony Convictions
- t. Proof of Insurance
- u. GDOT DBE Certification
- v. Bid Documents Submittal Checklist

12. Contract Award Forms, Certifications and Requirements are listed below:

- a. Notice of Intent to Award
- b. Contract Agreement
- c. Certificate of Corporate Authority or Certificate of Authority for Limited Liability Corporation, Partnership or Sole Owner
- d. Performance Bond
- e. Labor and Payment Bond
- f. Certificates of Insurance and Insurance Policies
- g. Notice to Proceed
- h. Application and Certificate for Payment
- i. Certificate of Substantial Completion
- j. Contractor's Affidavit Regarding Settlement of Claims
- k. Conditional Waiver and Release Upon Progress Payment
- l. Contractor's Final Release and Waiver of Lien
- m. Contractor's Affidavit of Payment of Debts and Claims
- n. Consent of Surety to Final Payment

13. Pre-Construction Submittals are listed below:

- a. Construction Schedule

- b. Safety Plan Compliance Document
- c. Material Shop Drawings
- d. Concrete Mix Formula
- e. Quality Control Program

## Part VI: TECHNICAL SPECIFICATIONS

The following technical specifications are included in this bid package:

GDOT 610	Removal of Miscellaneous Roadway Items
GDOT 680	Highway Lighting
C-102	Temporary Air and Water Pollution, Soil Erosion, and Siltation Control
C-105	Mobilization
P-606	Adhesive Compounds, Two-Component for Sealing Wire and Lights in Pavement
P-610	Concrete for Miscellaneous Structures
T-901	Seeding
T-908	Mulching
D-101	Airport Rotating Beacons
L-103	Airport Beacon Towers
L-107	Airport Wind Cones
L-108	Underground Power Cable for Airports
L-109	Airport Transformer Vault and Vault Equipment
L-110	Airport Underground Electrical Duct Banks and Conduits
L-115	Electrical Manholes and Junction Structures
L-119	Airport Obstruction Lights
L-125	Installation of Airport Lighting Systems

## Part VII: FUNDING

1. This project is funded by the Federal Aviation Administration, State of Georgia, and Local Funds. The project will be administered by Kimley-Horn and GDOT Aviation.
2. Certain mandatory federal requirements apply to this solicitation and will be made a part of any contract awarded:
  - a. President's Executive Order No. 11246 as amended by 29 CFR Part 30 and 41 CFR Part 60. (Prohibits discrimination in employment regarding race, creed, color, sex, or national origin)
  - b. Davis-Bacon and Related Acts, 29 CFR Parts 1, 3 and 5 (Wages).
  - c. Copeland Act, 29 CFR Part 3. (Payroll deductions permitted by Secretary of Labor)
  - d. Contract Work Hours and Safety Standards Act
  - e. Buy American Preferences, Title 49 USC, Chapter 501

- All acquired steel and manufactured products installed under the AIP assisted project must be produced in the United States
- f. Title VI of Civil Rights Act of 1964
  - Ensures that in any contract entered pursuant to this advertisement for bids, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on grounds of race, color, national origin or sex in consideration for an award.
- g. Minority Business Enterprises Participation 49 CFR Part 26. Contractor to provide a monthly update on DBE use with all pay requests.
- h. Foreign Trade Restriction, DOT Regulation 49 CFR Part 30
  - Denial of Public Works contracts to suppliers of goods and services of countries that deny procurement market access to U.S. contractors.
- i. Contractor & Subcontractor affidavits certifying compliance with O.C.G.A. 13-10-91.
  - Contractor and subcontractor must state affirmatively that the firm has registered with and is participating in a federal work authorization program in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.
- j. Drug Free Workplace Act

#### Part VIII: PROJECT PAYMENTS

1. Construction invoice to be submitted by the Contractor every 30 days.
2. Lump Sum items will be paid on percent complete at the time of the invoice.
3. Estimated turnaround time on invoices is 4-6 weeks from Engineer's approval.
4. Contractor to coordinate pay request with Inspector prior to submitting it to Kimley-Horn for review and processing.
  1. All back-up paperwork (wage reports, DBE reports, certified payroll, etc.) must be included with payment request prior to processing.
  2. 10% retainage will be withheld by the Owner on each progress payment and shall be released upon completion of the work. Payment will be made monthly on completed work.
  3. Stored material is not to be included in pay requests.
    - a. GDOT will not pay for stored material.
5. Mobilization shall be limited to ten (10) percent of the total project cost.
  1. This is an FAA requirement now. However, if mobilization is over 10%, any mobilization costs over 10% of the project total must be documented and will be paid on an as-incurred basis. Any non-incurred costs will not be paid. Reference FAA AC 150/5370-10H.
6. "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%.

#### Part IX: PROJECT COORDINATION

1. Contractor shall maintain continual communication with the Owner and Engineer.
2. Progress meeting between Contractor, Owner and Engineer shall be conducted as needed.

#### Part X: PROJECT SECURITY AND SAFETY

1. Safety and security are of paramount importance on the project.
2. Contractor shall fully acquaint themselves with the Construction Safety and Phasing Plan.

#### Part XI: ADDITIONAL NOTES

1. This is a joint federal and locally funded project.
2. Davis Bacon Wage Rates are applicable and certified payroll reports will be required to be submitted.
3. Contractor is required to conduct all specified quality control and testing procedures. All records of these tests shall be provided to the Engineer for review.
4. Contractor is responsible for all survey required to layout the construction of the project.
5. Existing airfield pavements shall not be utilized as haul routes, staging areas or for storage of equipment/materials.
6. All federal, state & local permits, licenses & fees associated with the construction project are the contractor's responsibility.

#### Part XII: UPCOMING ADDENDA

1. Pre-bid agenda, sign in sheet and summary of significant questions.

#### Part XIII: PROJECT SITE REVIEW AND QUESTIONS/COMMENTS

1. Construction Plans will be available, and Project Site will be open for review and discussion.

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**DIVISION 1 – ADVERTISEMENT****ADVERTISEMENT FOR BIDS****DALTON MUNICIPAL AIRPORT  
DALTON, GEORGIA**

Sealed bids will be received by the *City of Dalton, Dalton, Georgia* at the City Hall **300 W. Waugh Street, Dalton, Georgia 30720** on **April 23, 2025, until 2:00 PM EST** and at that hour opened and publicly read aloud for the improvements to the Airport as listed herein.

A non-mandatory pre-bid meeting will be held at the project site, the Dalton Municipal Airport, at 4483 Airport Road SE, Dalton GA 30721 on **April 8, 2025, at 11:00 AM EST.**

**PROJECT DESCRIPTION**

The work consists of furnishing all labor, equipment, and materials and performing all work in strict accordance with the plans and specifications for:

**AIRFIELD ELECTRICAL REHABILITATION**

The location of the work is at the *Dalton Municipal Airport, Dalton, Georgia*.

Prospective bidders should read the following instructions carefully before submitting their bids. For each item on the bid form there is a space provided for the price to be shown in numerals and words. All notations must be in ink. Totals read at the opening of bids are not guaranteed to be correct and no final award of contract will be made until the bid and extensions have been verified.

A Bidder's bond must be executed on the form furnished by the Sponsor, and the required bond, cash, cashier's check, or certified check must accompany each proposal, in the amount of 5% of the total amount of the proposal. A 100% performance bond and a 100% payment bond will be required of the Contractor at time of contract execution. A Georgia Resident Agent must countersign all bonds from a surety company authorized by law to do business in this State pursuant to a current certificate of authority to transact surety business by the Commissioner of Insurance; no bond shall be approved unless the surety is on the United States Department of Treasury's list of approved bond sureties.

The successful bidder will be required to provide the Sponsor with the affidavit required by OCGA 36-91-21 (e) *Competitive Award Requirements*.

All work under the contract shall be completed within **Sixty (60) Calendar Days** from the issuance of the notice to proceed.

**Liquidated Damages:** Liquidated damages for delays in completion will be One Thousand Five Hundred Dollars (\$1,500.00) per calendar day.

Payment will be made monthly on completed work. Retainage will be held by the Sponsor to a maximum of ten percent (10%) of each progress payment.

Copies of the plans, specifications, and bid forms may be on file at the following locations:

*the Document Processing Center, Construct Connect:*

- 3825 Edwards Rd., Suite 800, Cincinnati, Ohio 45209  
*the Dalton Municipal Airport:*
- 4483 Airport Road SE, Dalton, GA 30721  
*and the Bid Phase Consultant's office, Kimley-Horn and Associates, Inc.:*
- 11720 Amber Park Drive, Suite 600, Alpharetta, GA 30009

They may be examined at these offices without charge.

Bidder may request a complete electronic copy of the Bidding Documents and join the Plan Holders List by email to the bid phase consultant:

- **Sam Malte** at [sam.malte@kimley-horn.com](mailto:sam.malte@kimley-horn.com)

No prints or sets of drawings will be issued by the Owner. Cost of reproduction for printing shall be paid by the Bidder. **All Bidders must be on the plan holders list in order to be considered for work on the project.** Addenda and additional information will only be provided to those contractors on the plan holders list.

Envelopes containing bids must be sealed, addressed to the undersigned, and marked as follows: **"Bid for Construction at Dalton Municipal Airport, Airfield Electrical Rehabilitation, Dalton, Georgia. Croy Engineering Project 2106.006."** Bids will be required to remain open for acceptance or rejection for **one-hundred and twenty (120) calendar days** after the date of opening of bids.

### IMPORTANT NOTICE TO BIDDERS

**IMPORTANT NOTICE TO BIDDERS:** The following regulations and requirements apply to this project:

**Buy American Preferences** (Title 49 USC, Chapter 501) All acquired steel and manufactured products installed under the AIP assisted project must be produced in the United States.

**Foreign Trade Restriction:** Denial of Public Works contracts to suppliers of goods and services of countries that deny procurement market access to US contractors (DOT Reg. 49 CFR Part 30)

**Government wide debarment and suspension and government wide requirements for drug free workplace.** (DOT Regulation 49 CFR Part 29)

**Davis-Bacon Act** (DOL Regulation 29 CFR Part 5)

**Affirmative Action to Ensure Equal Employment Opportunity** (Executive Order 11246 and DOL Regulation 41 CFR Part 60)

**DBE OBLIGATION.** The bidder shall make good faith efforts, as defined in Appendix A of 49 CFR Part 26, Regulations of the Office of the Secretary of Transportation, to subcontract **7.28% percent** of the dollar value of the prime contract to small business concerns owned and controlled by socially and 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 including: women, African American, Hispanics, and Native Americans, Asian-Pacific Americans, and Asian-Indian Americans. The apparent successful competitor will be required to submit, with the bid, information concerning 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 to be 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.

Contractor and Subcontractor must state affirmatively that the firm has registered with and is participating in a federal work authorization program in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

**Title VI Solicitation Notice:**

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

The bidder must have at his disposal the necessary equipment to put on the project when notice is given to begin work and to do the work within the time specified. The proposal of any bidder will be rejected if the award of the work for which the proposal is submitted, may, in the judgment of the Sponsor, affect the workmanship, financing or progress of other work awarded to the bidder in the same letting or other work which the bidder may have under contract.

THE RIGHT TO REJECT ANY OR ALL BIDS AND TO WAIVE INFORMALITIES IS RESERVED TO THE SPONSOR.

---

Andrew Wiersma, Airport Manager  
City of Dalton, Georgia

**END OF ADVERTISEMENT**

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## **DIVISION 2 – INSTRUCTIONS TO BIDDERS**

### **INSTRUCTIONS TO BIDDERS**

#### **GENERAL**

ALL PROVISIONS OF THE FEDERAL AVIATION ADMINISTRATION SPECIFICATIONS SHALL APPLY AS MODIFIED IN TECHNICAL SPECIFICATIONS SECTION, EXCEPT WHERE SPECIFIED THAT SECTION APPLIES TO GEORGIA STANDARD SPECIFICATIONS CONSTRUCTION OF TRANSPORTATION SYSTEM, 2021 EDITION.

The following requirements apply to the contract(s) for this project:

#### **PREQUALIFICATIONS OF BIDDER**

As per Rules 672-5-.04 and 672-5-.11 in the Rules and Regulations of the State of Georgia, All persons proposing to bid on Department work, except as otherwise provided in Rule 672-5-.05, for the performance of any contract in excess of \$2,000,000, must submit an application under oath on forms to be furnished by the office of the Prequalification Committee. The application must be filed at least ten (10) days prior to the opening of any bids the prospective bidder proposes to submit. All persons proposing to bid on Department work for the performance of any contract below the requirements set forth in Rule 672-5-.04(1) must be registered as a subcontractor as provided for in Rule 672-5-.11. In order for the Department to maintain a register of subcontractors, any person desiring to perform work on Department projects as a subcontractor must submit a notification of such desire under oath to the Department on forms to be furnished by the Department. The original notification may be filed at any time, but in no case less than ten (10) days prior to the prime contractor's requesting approval of the subcontract to which the prospective subcontractor will be a party.

Bidders that are not pre-qualified and have submitted an application with the above stated rules shall also furnish the Sponsor satisfactory evidence of his/her competency to perform the proposed work. Such evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, a list of equipment that would be available for the work, and a list of key personnel that would be available. In addition, each bidder shall furnish the Sponsor satisfactory evidence of his/her financial responsibility. Such 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 Contractor's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether his/her financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect his/her (bidder's) true financial condition at the time such qualified statement or report is submitted to the Sponsor.

Unless otherwise specified, a bidder may submit evidence that he is prequalified with the Georgia DOT and is on the current "bidder's list" of the state in which the proposed work is located. Such evidence of Georgia DOT prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports hereinbefore specified.

Each bidder shall submit "evidence of competency" and "evidence of financial responsibility" to the Sponsor at the time of bid opening.

Bids will only be considered by those bidders and subcontractors currently pre-qualified with the Georgia DOT for work in the vicinity of the proposed work.

**BID GUARANTEE BOND OF 5%**

(49 CFR Part 18.36 (h)(1)) Each Bidder shall post a proposal guarantee bond in the amount of 5% of the bid price. No bids shall be read or considered without a proper form of security.

**PERFORMANCE BOND OF 100%**

(49 CFR Part 18.36 (h)(2)), Bidder shall post a performance bond in the amount of 100% of the bid price if awarded the contract. Such bond(s) are due prior to contract execution as a guarantee of timely delivery and that equipment, materials and /or goods are delivered according to specifications.

**PAYMENT BOND OF 100%**

(49 CFR Part 18.36 (h)(3)), Bidder shall post a payment bond payable to the SPONSOR in the amount of 100% of the bid price if awarded the contract. Such bond(s) are due prior to contract execution to guarantee timely payment of invoices to any subcontractors.

**AUTHORITY TO SIGN**

If an individual makes a Proposal, his name and post office address must be shown. If made by a firm or partnership, the name and post office address of each member of the firm or partnership must be shown. If made by a corporation, the person or persons signing the Proposal must show the name of the State under the laws of which the corporation is chartered and his, or their, authority for signing same, and the names, titles and addresses of the President, Secretary and Treasurer, and the corporate authority for doing business in this State. In the case of a Limited Liability Corporation a Certificate of Authority shall be executed by the Chief Officer certifying that he/she has the authority to execute contracts between the LLC and SPONSOR. A bid executed by an attorney or agent on behalf of the Bidder shall be accompanied by an authenticated copy of the Power of Attorney or other evidence of authority to act on behalf of the Bidder.

**NON-COLLUSION**

By submitting a bid in response to this solicitation, the Bidder represents that in the preparation and submission of this bid, said Bidder did not either directly or indirectly, enter into any combination or arrangement with any person, Bidder, Corporation or enter into any agreement, participate in any collusion, or otherwise take any action in the restraint of free, competitive bidding in violation of the Sherman Act (15 U.S.C. Section 1 or Section 59.1-9.1 through 59.1-9.17 or Sections 59.1 – 68.6 through 59.68.8). Collusion and fraud in bid preparation shall be reported to the State of Georgia Attorney General and the United States Justice Department.

**DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

(49 CFR Part 29), The bidder/offeror certifies, by submission of this proposal or acceptance of this contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees by submitting this proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the bidder/offeror/Contractor or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/proposal.

**BUY AMERICAN PREFERENCES**

The Contractor certifies that its bid/offer is in compliance with 49 USC § 50101, BABA and other related Made in America Laws, 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/SPONSOR 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 construction 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.

### **FOREIGN TRADE RESTRICTION**

(49 CFR Part 30), Denial of Public Works Contracts to Suppliers of Goods and Services of Countries that Deny Contracts to Suppliers of Goods and Services of Countries that Deny Procurement Market Access to U. S. Contractors. The successful bidder must comply with 49 CFR Part 30 and submit the Certification Regarding Foreign Participation provided in the proposal documents.

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

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

- 1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR; or
- 2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such USTR list; or

- 3) who incorporates in the public works project any product of a foreign country on such USTR list.

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

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

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

#### **CERTIFICATION OF NONSEGREGATED FACILITIES**

(41 CFR Part 60-1.8), The successful bidder must comply with 41 CFR Part 60-1.8 and submit the Certification of Nonsegregated Facilities provided in the proposal documents.

#### **EQUAL EMPLOYMENT OPPORTUNITY**

(Executive Order 11246 & 41 CFR Part 60), The successful bidder must comply with 41 CFR Part 60 and submit the Equal Opportunity Report Statement provided in the proposal documents.

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.

#### **NONDISCRIMINATION**

Notwithstanding any other provision of this Agreement, during the performance of this Agreement CONTRACTOR, for itself, its heirs, personal representatives, successors in interest and assigns, as part of the consideration of this Agreement does hereby covenant and agree, as a covenant running with the land, that:

1. No person on the grounds of race, color, religion, sex or national origin shall be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination;
2. In the production of the vehicle(s), and the furnishing of services therein or thereon, no person on the grounds of race, color, religion, sex or national origin shall be excluded from participation in, or denied the benefits of, such activities, or otherwise be subjected to discrimination.

**DISADVANTAGED BUSINESS ENTERPRISE**

(49 CFR Part 26) The Contractor and/or its 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. The overall DBE goal for this project is **7.28%**.

**Bid Information Submitted as a matter of responsiveness:**

The SPONSOR'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:

- 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 SPONSOR'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.

**Bid Information submitted as a matter of responsibility:**

The SPONSOR'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 responsibility, every Bidder or Offeror must submit the following information on the forms provided herein within five days after bid opening.

- 1) The names and addresses of Disadvantaged Business Enterprise (DBE) firms that will participate in the contract;
- 2) A description of the work that each DBE firm will perform;
- 3) The dollar amount of the participation of each DBE firm listed under (1);
- 4) Written statement from Bidder or Offeror that attests their commitment to use the DBE firm(s) listed under (1) to meet the SPONSOR'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.

**Contract Assurance**

The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of 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.

**Prompt Payment (49 CFR § 26.29; acceptable/sample text provided) –**

The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than 10 days from the receipt of each payment the prime contractor receives from Sponsor. The prime contractor agrees further to return retainage payments to each subcontractor within 10 days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Sponsor. This clause applies to both DBE and non-DBE subcontractors.

**Termination of DBE Subcontracts (49 CFR § 26.53(f); acceptable/sample text provided) –**

The prime contractor must not terminate a DBE subcontractor listed in response to this Bid Solicitation (or an approved substitute DBE firm) without prior written consent of Sponsor. 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 Sponsor. Unless Sponsor 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.

Sponsor may provide such written consent only if Sponsor 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 Sponsor 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 Sponsor, of its intent to request to terminate and/or substitute, and the reason for the request.

The prime contractor must give the DBE five days to respond to the prime contractor's notice and advise Sponsor and the contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why Sponsor should not approve the prime contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), Sponsor 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.

**DAVIS BACON ACT**

(29 CFR Part 5) This project is partially funded by the U. S. Department of Transportation under the Federal Aviation Administration's Airport Improvement Program. Therefore, the project is subject to minimum wages as determined by the U. S. Dept. of Labor. The applicable Wage Determination is

a part of Section 130.

#### **DRUG FREE WORKPLACE CERTIFICATION**

The CONTRACTOR must certify that they are in full compliance with the provisions of Code Sections 50-24-1 through 50-24-6 of the Official Code of Georgia Annotated, relating to the "Drug-free Workplace Act". The undersigned further certifies that:

- a. A drug-free workplace will be provided for the CONTRACTOR'S employees during performance of the contract; and
- b. Each CONTRACTOR who hires a subcontractor to work in a drug-free work place shall secure from that subcontractor the following written certification:  
"As part of the subcontracting agreement with (CONTRACTOR's name), (Subcontractor's name) certifies to the CONTRACTOR that a drug-free workplace will be provided for the subcontractor's employees during the performance of this Contract pursuant to Paragraph (7) of Sub-section (b) of Code Section 50-24-3".
- c. The CONTRACTOR further certifies that he will not engage in the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the Contract.
- d. CONTRACTOR may be suspended, terminated, or debarred if it is determined that:
  - (1) The CONTRACTOR has made false certification hereinabove; or
  - (2) The CONTRACTOR has violated such certification by failure to carry out the requirements of the Official Code of Georgia Section 50-24-3.

#### **PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT**

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to use and procurement of certain telecommunications and video surveillance services or equipment in compliance with the National Defense Authorization Act [Public Law 115-232 § 889(f)(1)].

#### **SUBCONTRACTORS, SUPPLIERS AND OTHERS**

All BIDDERS shall submit as part of their BID on the prescribed schedules a list of all subcontractors and other persons and organizations (including those who are to furnish principle items of material and equipment) proposed for those portions of the Work as to which such identification is required. If requested by SPONSOR, the low BIDDER shall submit an experience statement with pertinent information as to similar projects and other evidence of qualification for each subcontractor, other person or organization. If SPONSOR after due investigation has reasonable objection to any proposed subcontractor, other person or organization, the SPONSOR may before giving the NOTICE OF AWARD require the apparent Successful BIDDER to submit an acceptable substitute without an increase in Bid Price. If the apparent Successful BIDDER declines to make any such substitution, the Contract shall not be awarded to such BIDDER, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any subcontractor, other person, or organization so listed and to whom the SPONSOR does not make written objection prior to giving the NOTICE OF AWARD will be deemed acceptable to SPONSOR.

#### **GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT**

Pursuant to the Georgia Security and Immigration Compliance Act of 2006, the successful CONTRACTOR understands and agrees that compliance with the requirements of O.C.G.A.13-10-91 and Georgia Department of Labor Rule 300-10-02 are conditions of this bid and contract document. The CONTRACTOR further agrees that such compliance shall be attested by the CONTRACTOR and any of his Subcontractors by execution of the appropriate Affidavit and Agreement which will be included and become a part of the Agreement between the SPONSOR and the successful CONTRACTOR. The Affidavits must be provided to the SPONSOR within five (5) business days of the Subcontractor being hired to work on the project.



**SYSTEMATIC ALIEN VERIFICATION FOR ENTITLEMENTS (SAVE) PROGRAM**

Since a contract has been deemed a "public benefit," the CONTRACTOR or other party to the contract must be run through the federal Systematic Alien Verification for Entitlements (SAVE) Program. This program requires that local government verify the legal status of non-U.S. citizens who apply for certain benefits. The CONTRACTOR must execute a SAVE affidavit attesting that either he or she is a U.S. citizen or legally qualified to receive the benefit. If the contractor is not a U.S. citizen, then the local government has to run that contractor through the SAVE system. Only non-U.S. citizens can be processed through the SAVE program.

**BID FORM AND SCHEDULES**

One copy of the Bid Form and Schedules is included with the Bidding Documents.

All blanks on the Bid Forms and schedules must be completed by permanent marking. Each Bid must be submitted on the prescribed form. The Bid Price must be stated in words and numerals or as indicated in the BID FORM.

BIDS by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or assistant secretary of the corporation. The corporate address and state of incorporation shall be shown in the space provided.

BIDS by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature. The address and telephone numbers to which communications regarding the BID are to be directed must be shown on the Bid Form.

All names must be typed or printed below the signatures. The individual OWNER and the terms "doing business" must sign BIDS by individuals or "sole OWNER" must appear under the signature.

The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of all addenda and the date each was received shall be filled in on the BID form).

**ADDENDA AND INTERPRETATIONS**

All questions about the meaning or intent of the Contract Documents are to be directed to ENGINEER. Requests for interpretations of drawings and specifications must be made in writing to the Engineers not later than **five (5) days** (weekends and holidays not included) prior to receipt of Proposals. Any interpretations made to bidders will be issued in the form of Addenda to the specifications and furnished to all bidders. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Only questions answered by formal written Addenda will be binding. Oral explanations and interpretations made prior to the bid opening shall not be binding and without legal effect. Addenda may also be issued to modify the Bidding Documents as deemed advisable by SPONSOR and ENGINEER.

Failure of any BIDDER to receive and/or acknowledge any such Addendum or interpretation shall not relieve BIDDER from any obligation under this BID as submitted.

**EXCEPTIONS AND OMISSIONS**

If exceptions are taken to any portion of these specifications, such exception must accompany the bid and must be in writing. If any feature normally included in a complete job of this nature is omitted from these specifications, it too must be so stated in writing and be included with the bid.

**PREPARATION OF BIDS**

Negligence on the part of the Bidder in preparing the bid confers no right for withdrawal or modification in any way after the deadline for the bid opening.

Unit price must be shown on the Bid Cost Submittal Form in this document. All bids should be tabulated, totaled and checked for accuracy. The unit price will prevail in case of errors.

All product, equipment, article or material must be new and unused or current production. No reconditioned or used item(s) will be accepted except as specifically requested herein. Units that are classified as prototype or discontinued models are not acceptable.

**EXAMINATION OF PLANS, SPECIFICATIONS AND SITE**

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

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

**ESTIMATED QUANTITIES**

Estimated Quantities: Where quantities of work are given in the BID they are approximate and are assumed solely for comparison of the BIDS. They are not guaranteed to be accurate statements or estimates of quantities of work that are to be performed under the contract, it being presumed that the BIDDER has verified the quantities necessary to complete the Work of the contract as intended, and any departure therefrom will not be accepted as valid grounds for any claim for damages, for extension of time or for loss of profits; not with any additional payment be made, regardless of the actual quantities required or ordered to complete the Work.

**SUBMISSION OF BIDS**

BIDS shall be submitted at the time and place indicated in the Advertisement. Each BID shall be enclosed in a sealed envelope and marked and addressed as required in the below and in the Advertisement and shall be accompanied by the Bid Security and other required documents. If the BID is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED for (Project Name)" on the face thereof. Submit original and one copy of the Bid Form, Schedules and other required documents.

Indicate the following information on the outside of the sealed envelope containing the bid:

- a. Project Name as stated on page one of the Bid Forms
- b. Project Number
- c. Location of Airport
- d. Bidder's Name and Address

**Submit Bids to:      City of Dalton**

**300 W. Waugh Street  
Dalton, Georgia 30722**

The Submittal Checklist must be reviewed, and the bidder is to comply with the order of the submittal of documents. This document is to be included with the bid.

Bids may be submitted by mail, common carrier or delivered in person. Fax or electronic bids are not acceptable. It shall be the duty of each Bidder to ensure that their bid is delivered within the time and at the place prescribed in this document. Bids received prior to the time fixed in this bid document will be securely kept unopened. Any bid received at the office designated in this document after the exact time and date specified, will not be considered. If a late bid is received via carrier, it will be marked "late bid" and will not be opened. If a late bid is hand delivered, it will be returned unopened to the presenter.

At the date and time specified for the opening of the bid, the bid shall be publicly opened and read aloud for the information of Bidders and others present.

If descriptive literature is attached to the bid, your firm's name must be on all sheets submitted.

Each bid submitted shall be deemed to have been made with full knowledge of all terms, conditions, and requirements contained in this Bid request. The failure or omission of any Bidder to examine any form, instrument or document shall in no way relieve any Bidder from obligations in respect to the bid submittal or the compliance of the terms, conditions and requirements of the bid.

Individual contractors shall provide their Social Security number and proprietorships; partnerships and corporations shall provide their Federal Employer Identification number and provide a completed W9 form to be submitted with the bid.

The authorized representative whose signature will appear on the bid submitted certifies that the Bidder has carefully examined the instructions of this bid and the terms and specifications applicable to and made a part of this bid. The Bidder further certifies that the prices shown on the Bid Price Submittal Form is in accordance with the conditions, terms and specifications of the bid and that any exception taken thereto may disqualify the bid.

Bids shall be made on the enclosed form if a form is provided.

Any documentation submitted with or in support of a bid or bid shall become subject to public inspection under the Georgia Open Records Act. Labeling such information "Confidential", "Proprietary", or in any other manner shall not protect this material from public inspection upon request. All records become subject to public inspection only after award of the contract or purchase order.

### **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 Sponsor in writing or by telegram before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

### **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.

### **CONSIDERATION OF PROPOSALS**

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

Until the award of a contract is made, the Sponsor 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.
- b. If the bidder is disqualified for any of the reasons specified in the subsection titled DISQUALIFICATION OF BIDDERS.

In addition, until the award of a contract is made, the Sponsor reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Sponsor 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 Sponsor's best interests.

### **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 SPONSOR, or if the SPONSOR'S form is altered or if any part of the proposal form is detached.
- b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite or otherwise ambiguous.
- c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the BIDDER is not required to furnish a unit price.
- d. If the proposal contains unit prices that are obviously unbalanced.
- e. If the proposal is not accompanied by the proposal guarantee specified by the SPONSOR.

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

### **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 Sponsor until any such participating bidder has been reinstated by the Sponsor as a qualified bidder.
- c. If the bidder is considered to be in "default" for any reason specified in the subsection titled ISSUANCE OF PROPOSAL FORMS of this section.

### **RETURN OF PROPOSAL GUARANTY**

All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the Sponsor has made a comparison of bids. Proposal guaranties of the two lowest bidders will be

retained by the Sponsor 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 Sponsor receives the contracts bonds.

### **RIGHTS RESERVED**

SPONSOR reserves the right to reject any and all Proposals, to waive any and all informalities not involving price, time or changes in the work, and to negotiate contract terms with the Successful BIDDER, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional Proposals. Discrepancies between words and figures will be resolved in favor of words. Also, SPONSOR reserves the right to reject the Proposals of any BIDDER if SPONSOR believes that it would not be in the best interest of the Project to make any award to that BIDDER, whether because the Proposal is not responsive or the BIDDER is unqualified or of doubtful financial ability or fails to meet any other pertinent standards or criteria established by SPONSOR. Discrepancies between the indicated sum or any column of figures and the correct sum thereof will be resolved in favor of the correct sum. On contract where unit prices are required, the right is reserved to increase or decrease the quantities specified, without changing the unit prices bid.

### **SUBSTITUTE OR "OR-EQUAL" ITEMS**

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" Items. Whenever it is indicated on the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement.

### **AWARD OF CONTRACT**

**Responsiveness** - The determination of the Bidder's responsiveness will be made by the SPONSOR based on a consideration of whether the Bidder has submitted the following:

- Complete bid documents meeting bid requirements without irregularities, obviously unbalanced unit prices, excisions, special conditions, or alternatives bids for any item unless specifically requested in the bid solicitation.
- A properly executed Bid Bond.

In evaluation of Proposals, SPONSOR will consider qualifications of the BIDDERS and whether or not the Proposals comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Proposal form or prior to the Notice of Award.

SPONSOR may consider the qualifications and experience of subcontractors, other persons or organizations (including those who are to furnish the principle items of materials and equipment) proposed for those portions of the work as to which the identity of subcontractors and other persons and organizations must be submitted. SPONSOR may also consider operating costs, maintenance considerations, performance data and guarantees of materials may also be considered by SPONSOR, when such data is submitted prior to Notice of Award.

SPONSOR may conduct such investigations as he deems necessary to assist in the evaluation of any Proposal and to establish the responsibility, qualifications and other persons and organizations to do the work in accordance with the contract documents to Sponsor's satisfaction within the prescribed time.

**Responsibility** - The determination of the Bidder's responsibility will be made by the SPONSOR based on whether the Bidder meets the following minimum standard requirements:

- Maintains a physical location presence and permanent place of business.
- Has the appropriate and adequate technical experience required.
- Has adequate personnel and equipment to perform the work expeditiously
- Able to comply with the required or proposed delivery and installation schedule.
- Has a satisfactory record of performance.
- The ability of Bidder to provide future maintenance and service for the use of the contract under consideration.
- Has adequate financial means to meet obligations incidental to the work.
- Such other factors as appear to be pertinent to either the bid or the contract.

In considering BIDS for this Work, particular attention will be given to the method of construction which the BIDDER plans to follow; the available experienced and skilled men which he plans to use in the prosecution of Work; the types of equipment and materials he plans to install; and, he shall prepare and furnish this information in writing at the SPONSOR's request.

Furthermore, the successful BIDDER must, prior to the award of the Contract, be prepared to discuss in detail all manners relating to any special features of the Work with the end view of obtaining high-grade workmanship and proper performance of the Contract.

SPONSOR reserves the right to reject the BID of any BIDDER who does not pass any evaluation to Sponsor's satisfaction.

If a contract is to award, it will be awarded to the lowest BIDDER whose evaluation by SPONSOR indicates to SPONSOR that the award will be in the best interests of the Project.

If the lowest or the best BID exceeds the funds available for the work, the SPONSOR may reject all BIDS, or reduce the Scope of Work as necessary to diminish the total cost of the project to a sum compatible with the funds available for the specified work.

Award of the Contract, if awarded, will be made by the SPONSOR, upon the recommendation of the ENGINEER to the lowest responsible, responsive BIDDER, whose Proposal meets the requirement of the SPONSOR, and complies with the applicable laws of the State of Georgia.

If a contract is to be awarded, SPONSOR will give the Successful BIDDER a NOTICE OF AWARD within **one-hundred and twenty (120) calendar days** after the day of bid Opening, or such mutually agreeable extension of time.

#### **CANCELLATION OF AWARD**

The SPONSOR 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 SPONSOR.

#### **SIGNING OF AGREEMENT**

After the SPONSOR gives a NOTICE OF AWARD to the successful BIDDER, they will submit **three (3)** unsigned counterparts of the Agreement and all other required Contract Documents. Within **fifteen (15) days** following the effective date of "Award" CONTRACTOR shall sign and deliver all executed counterparts of the Agreement to the SPONSOR with all other Contract Documents including insurance certificates and executed bonds attached thereto. SPONSOR will identify those portions of the Contract Documents not fully signed by the SPONSOR and CONTRACTOR and such identification shall be binding on all parties.

**FAILURE TO EXECUTE CONTRACT**

Failure to execute contract and file acceptable bonds as provided herein within **fifteen (15) days** from the date of award shall cause forfeiture of the Proposal Guaranty to the SPONSOR not as a penalty, but in liquidation of damages sustained. At the discretion of the SPONSOR, the award may then be made to the next lowest responsible BIDDER, or the work may be re-advertised.

**CONTRACT ASSURANCE**

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

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

**PROMPT PAYMENT**

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

**INDEMNIFICATION**

The vendor that is selected as the contractor shall, at its own expense, protect, defend, indemnify, save and hold harmless the SPONSOR and its elected and appointed officers, employees, servants and agents from all claims, damages, lawsuits, costs and expenses including, but not limited to, all costs from administrative proceedings, court costs and attorney fees that the SPONSOR and its elected and appointed officers, employees, servants and agents may incur as a result of the acts, omissions or negligence of the contractor or its employees, servants, agents or subcontractors that may arise out of the agreement.

The CONTRACTOR's indemnification responsibility under this section shall include the sum of damages, costs and expenses which are in excess of the sum of damages, costs and expenses which are paid out in behalf of or reimbursed to the SPONSOR, its officers, employees, servants and agents by the insurance coverage obtained and/or maintained by the CONTRACTOR.

**CONTRACT TIME**

The numbers of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the Contract Time) are set forth in the Bid Form and the Agreement. Contract Time for this project is **SIXTY (60) Calendar Days** from issuance of notice to proceed.

**LIQUIDATED DAMAGES**

Liquidated damages for the delays in completion will be One Thousand Five Hundred Dollars (\$1,500.00) per calendar day.

**PROJECT SCHEDULE**

A project schedule showing the work in the order proposed by the CONTRACTOR and the time required to complete each phase will be required before the signing of contract. This schedule shall include the dates for beginning and completion of all phases of the work. If, in the opinion of the ENGINEER, the CONTRACTOR falls behind in his schedule or will not be able to complete the project in the time limits, he may require the CONTRACTOR to revise his schedule and put additional manpower and equipment on the project if so ordered.

Notice to Proceed shall not be issued until the ENGINEER has approved the schedule in writing. Failure of the CONTRACTOR to comply with the schedule may be cause for withholding payments due the CONTRACTOR.

**CODES, PERMITS, FEES, LICENSES, AND LAW**

All permits, fees, arrangements for inspections, licenses, and costs incurred for the same shall be the sole responsibility of the successful Bidder. All materials, labor and construction must comply with all applicable rules and regulations of local, state and/or national codes, laws and ordinances of all authorities having jurisdiction over the project, shall apply to the contract throughout and will be deemed to be included in the contract the same as though herein written out in full.

*Effective July 1, 2008: All General Contractors must have a current valid license from the State Licensing Board for Residential and General Contractors, unless specifically exempted from holding such license pursuant to Georgia law, O.C.G.A. Section 43-41-17.*

**COPIES FURNISHED**

The ENGINEERS shall furnish the successful CONTRACTOR, free of charge, **two (2) copies** of the plans and specifications. If additional copies are the CONTRACTOR requests copies, they will be furnished at the price specified elsewhere in these documents.

**DRAWINGS AND SPECIFICATIONS ON THE SITE**

The CONTRACTOR shall keep one copy of all drawings and specifications on the site of the work in good order, available to the ENGINEERS and to their representatives.

**SANITARY PROVISIONS**

The CONTRACTOR shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the regulations of the State Board of Health and all local ordinances. No nuisance will be permitted.

**SAFETY**

All vendors and subcontractors performing services are required and shall comply with all Occupational Safety and Health Administration (OSHA), State and County Safety and Occupational Health Standards and any other applicable rules and regulations. Also, all contractors and subcontractors shall be held responsible for the safety of their employees and any unsafe acts or conditions that may cause injury or damage to any persons or property within and around the work site area under this Contract.

**RESPONSIBILITY**

The CONTRACTOR shall be responsible for all material and work until they are finally accepted by the SPONSOR and shall repair at his own expense any damage they sustain before their final



acceptance. The CONTRACTOR shall be responsible for all damages caused by him of whatever nature and must settle all claims arising from such damage without cost to the SPONSOR; he shall act as defendant in, and bear the expense of each and every suit, if any, and of every nature, which may be brought against him or the SPONSOR by reason of, or connected with the work under the contract; should any claim arise, the SPONSOR may hold back sufficient money to meet said claims until the CONTRACTOR has satisfied the SPONSOR that all claims against him as the result of his work have been adjusted. He must also show that there are no claims or liens whatsoever outstanding at the completion of the contract before final payment is made.

### **TESTING - GENERAL**

The CONTRACTOR shall use an independent testing laboratory for Quality Control project tests. A separate independent testing laboratory will be selected by the SPONSOR for the Quality Assurance Testing. The CONTRACTOR is responsible for Quality Control Testing, including costs. (See General Provisions Section 100-07 Quality Control Testing Plan.)

When the CONTRACTOR has prepared an item of work to the stage where testing is required, he shall notify the ENGINEER what portion of the project he desires to have tested. The ENGINEER shall initiate the tests required by the contract specifications.

However, the payment of the tests by the SPONSOR and scheduling by the ENGINEER does not relieve the CONTRACTOR of any responsibility in regards to meeting the job specification. If the CONTRACTOR desires additional tests, he may provide same for his own information.

Major testing to be done during construction is listed for each item in the Construction Details for that item.

### **DESIGN, STANDARDS AND PRACTICES**

Design, strength, quality of materials and workmanship must conform to the highest standards of engineering practices and/or professional services.

### **CLAIMS**

The SPONSOR reserves the right to refuse to issue any vouchers and to direct that no payment shall be made to the CONTRACTOR in case the SPONSOR has reason to believe that said CONTRACTOR has neglected or failed to pay any subcontractor, materialmen, workmen, or employee for work performed on or about the work included in these specifications until the SPONSOR is satisfied that such subcontractors, materialmen, workmen, or employees have been fully paid.

### **MANUFACTURER'S CERTIFICATION AND DELIVERY TICKETS**

The CONTRACTOR shall furnish a manufacturer's certificate of compliance with the Specifications on all materials furnished. A delivery ticket on all material delivered to job site shall be furnished to the ENGINEER.

### **STATEMENT OF WARRANTY**

A Statement of Warranty should include all applicable manufacturers' warranty as well as the manufacturer's required minimum 1 year warranty in regard to equipment, materials and workmanship. This statement shall include the terms, conditions and the period of warranty coverage. Any exclusion(s) must be clearly stated.

### **CONSTRUCTION OPERATIONS PLANS**

Specific guidelines for working on the airport apply to this project. These minimum guidelines are set forth on the Plans and in Section 01030 "Airport Project Procedures".

**CONSTRUCTION AS INDEPENDENT CONTRACTOR**

In conducting its business hereunder, CONTRACTOR acts as an independent contractor and not as an employee or agent of the SPONSOR. The selection, retention, assignment, direction and payment of CONTRACTOR's employees shall be the sole responsibility of CONTRACTOR.

**ASSIGNMENT**

The Agreement, in whole or any part hereof, created by the award to the successful CONTRACTOR shall not be sold, not be assigned or transferred by CONTRACTOR by process or operation of law or in any other manner whatsoever, including intra-corporate transfers or reorganizations between or among a subsidiary of CONTRACTOR, or with a business entity which is merged or consolidated with CONTRACTOR or which purchases a majority or controlling interest in the ownership or assets of CONTRACTOR without the prior written consent of the SPONSOR.

**PERFORMANCE OF CONTRACT**

The SPONSOR reserves the right to enforce the CONTRACTOR's performance of this Agreement in any manner prescribed by law or deemed to be in the best interest of the SPONSOR in the event of breach or default or resulting contract award. It will be understood that time is of the essence in the Bidder's performance.

The successful CONTRACTOR shall execute the entire work described in the Contract Documents, except to the extent specifically indicated in the Contract documents to be the responsibility of others.

The CONTRACTOR accepts the relationship of trust and confidence established by the award of this bid solicitation. The CONTRACTOR covenants with the SPONSOR to utilize the CONTRACTOR's best skill, efforts and judgment in furthering the interest of the SPONSOR; to furnish efficient business administration and supervision; to make best efforts to furnish at all times an adequate supply of workers and materials; and to perform the work in the best way and most expeditious and economical manner consistent with the interest of the SPONSOR.

All purchases for goods or services are subject to the availability of funds for this particular purpose.

**FAILURE TO COMPLY WITH PROVISIONS**

Failure to comply with the terms of these contract provisions may be sufficient grounds to:

- 1) Withhold progress payments or final payment,
- 2) Terminate the contract,
- 3) Seek suspension/debarment, or
- 4) Any other action determined to be appropriate by the sponsor or the FAA.

**DEFAULT AND TERMINATION**

**Termination by CONTRACTOR:** The agreement resulting from this bid shall be subject to termination by CONTRACTOR in the event of any one or more of the following events: The default by SPONSOR in the performance of any of the terms, covenants or conditions of this Agreement, and the failure of SPONSOR to remedy, or undertake to remedy such default, for a period of thirty (30) days after receipt of notice from CONTRACTOR to remedy the same.

**Termination by SPONSOR:** The agreement resulting from this bid shall be subject to termination by the SPONSOR at any time in the opinion of the SPONSOR; the CONTRACTOR fails to carry out the contract provisions of any one or more of the following events:

1. The default by CONTRACTOR in the performance of any of the terms, covenants or conditions of the Agreement, and the failure of CONTRACTOR to remedy, or undertake to remedy with sufficient forces and to the SPONSOR's reasonable satisfaction, the SPONSOR shall provide the vendor with notice of any conditions which violate or endanger the performance of the Agreement. If after such notice the CONTRACTOR fails to remedy such conditions within thirty (30) days to the satisfaction of the SPONSOR, the SPONSOR may exercise their option in writing to terminate the Agreement without further notice to the CONTRACTOR and order the CONTRACTOR to stop work immediately and vacate the premises, to cancel ordered products and/or services with no expense to the SPONSOR.
2. CONTRACTOR files a voluntary petition in bankruptcy, including a reorganization plan, makes a general or other assignment for the benefit of creditors, is adjudicated as bankrupt or if a receiver is appointed for the benefit of creditors, is adjudicated as bankrupt or if a receiver is appointed for the property or affairs of CONTRACTOR and such receivership is not vacated within thirty (30) days after the appointment of such receiver.
3. CONTRACTOR'S failure to conduct services according to the approved bid specifications.
4. CONTRACTOR'S failure to keep, perform, or observe any other term or condition of this Agreement.
5. CONTRACTOR'S performance of the contract is unreasonably delayed.
6. Should the successful Bidder fail to provide the commodities or services when ordered, and in accordance with the General Terms and Conditions, specifications and any other requirements contained herein are not met, the SPONSOR reserves the right to purchase commodities or services covered by this contract elsewhere if available from an alternate source.
7. The CONTRACTOR agrees by its bid submission that the SPONSOR's decision is final and valid.

**Force Majeure:** Neither party shall be held to be in breach of the Agreement resulting from this bid, because of any failure to perform any of its obligations hereunder if said failure is due to any act of God, fire, flood, accident, strike, riot, insurrection, war, or any other cause over which that party has no control. Such party shall give notice and full particulars of such Force Majeure in writing to the other party within a reasonable time after occurrence of the event and the obligation of the party giving such notice shall endeavor to remove or overcome such inability with all reasonable dispatch.

**Waiver:** The waiver of any breach, violation or default in or with respect to the performance or observance of the covenants and conditions contained herein shall not be taken to constitute a waiver any subsequent breach, violation or default in or with respect to the same or any other covenant or condition hereof.

## END OF INSTRUCTIONS TO BIDDERS

## DIVISION 3 – PROPOSAL DOCUMENTS

## PROPOSAL

IMPROVEMENTS TO DALTON MUNICIPAL AIRPORT  
DALTON, GEORGIA

Failure to furnish all requested data will be cause for considering Bidder nonresponsive and may render this Bid invalid on that basis.

BID FOR: **DALTON MUNICIPAL AIRPORT  
AIRFIELD ELECTRICAL REHABILITATION**

SUBMITTED TO: **CITY OF DALTON  
300 W. WAUGH STREET  
DALTON, GEORGIA 30722**

SUBMITTED BY:

TCA Electrical Contractors Inc.  
Bidder's Name

P. O. Box 345  
Address

Omega, Ga 31775  
City, State and Zip Code

229-387-7097 maury@tca-trifon.com  
Telephone email

The undersigned bidder has carefully examined the site of the work described herein, has become familiar with local conditions and the character and extent of the work, has carefully examined the drawings, the Advertisement, Proposal, Proposal Bond, Contract, Performance and Payment Bonds, Instructions to Bidders, General Conditions, General Provisions, and Special Provisions; and thoroughly understands their stipulations, requirements and provisions.

The undersigned bidder has determined the quality and quantity of materials required; has investigated the location and determined the sources of supply of the materials required; has investigated labor conditions; and has arranged for the continuous prosecution of the work herein described.

The undersigned bidder hereby agrees to be bound by the award of the contract and, if awarded the contract on this Proposal, to execute within **fifteen** calendar days after notice of award, the required Contract and the Performance Bond and Payment Bond, of which Contract this Proposal, the Plans for the work, and the Standard Specifications, with subsequent revisions shall be a part.

The undersigned bidder further agrees if awarded the contract on this proposal to begin work within **ten** days after the date of issuance of the Notice to Proceed unless otherwise authorized by the Engineer, and further agrees that within **fifteen** days after the date of the notice to proceed to have

at work all the equipment specified, along with such other necessary equipment as set out in the specifications.

The undersigned bidder further agrees to provide all necessary equipment, tools, labor, incidentals and other means of construction to do all the work, and furnish all the materials of the specified requirements which are necessary to complete the work in accordance with the Proposal, the Plans and the Specifications and set forth in the Proposal and to all "extra work" which may be required in connection with the construction and completion of the work as required by the Specifications Plans and Special Provisions.

For construction, the undersigned bidder has confirmed that the bidder's organization and equipment are available to perform the project. The bidder agrees, if deemed necessary by the Engineer, to increase this schedule of operations in order to complete the work within the time stated and to the satisfaction of the Engineer.

The bidder understands that the quantities of work shown herein are approximate only and are subject to increase or decrease and agrees that all quantities of work, whether increased or decreased, are to be performed at the unit prices stated in the following estimate of quantities and schedule of prices for the work described.

The undersigned bidder declares that this proposal is made without connection with any other person or persons making proposals for the same work, and is in all respects fair and without collusion or fraud. The bidder also declares that he/she will perform a minimum of **30%** of the contract work by his/her own forces.

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

Contract Time: Bidder agrees that:

- (A) The Project Work will be completed within **Sixty (60) Calendar Days** from the date when the Contract Time commences.
- (B) He will commence work with an adequate force and equipment at the time stated in the Notice to Proceed, and complete all work in the number of days stipulated from the date stated in said notice.
- (C) The quantities of work listed in the Bid Schedule are approximate and are assumed solely for comparison of Bids. Compensation will be based upon the price bid and actual quantities of work performed in accordance with the Contract Documents.
- (D) Liquidated damages for the delay in completion will be One Thousand Five Hundred Dollars (\$1,500.00) per calendar day.

The undersigned bidder submits herewith proposal guarantee in an amount of not less than five percent (5%) of the total amount of the proposal offered and agrees and consents that the proposal guarantee shall be forfeited to the Sponsor as liquidated damages if the required Contract,

Performance Bond and Payment Bond are not executed within fifteen (15) calendar days from the Notice of Award and work has not started as required in the previous statements.

JCA Electrical Contractors Inc.  
NAME OF BIDDER

BY: Mart H. Bernato  
NAME  
Vice-President  
TITLE

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## PROPOSAL BID FORM

IMPROVEMENTS TO DALTON MUNICIPAL AIRPORT  
DALTON, GEORGIAAIRFIELD ELECTRICAL REHABILITATION

SCHEDULE A - RUNWAY						
Item No.	Spec. Item No.	Description	QTY	Unit	Unit Price	Cost
1	C-105	Mobilization @ <u>thirty five thousand dollars + tax</u> / 1	1	LS	35,000. <sup>00</sup>	35,000. <sup>00</sup>
2	610	Removal of Existing Runway Lighting, complete, incl. wiring (existing base cans and conduit to remain) @ <u>thirty five hundred dollars + tax</u> / 1	1	LS	3,500. <sup>00</sup>	3,500. <sup>00</sup>
3	610	Removal of Existing Runway Signs, complete, incl. wiring @ <u>two thousand dollars + tax</u> / 1	1	LS	2,000. <sup>00</sup>	2,000. <sup>00</sup>
4	610	Removal of Existing 4-Box PAPI, including wiring @ <u>five hundred dollars + tax</u> / 2	2	EA	500. <sup>00</sup>	1,000. <sup>00</sup>
5	L-103-5.1	Removal of Existing Beacon Tower, including old foundation and wiring @ <u>four five hundred</u> + tax / 1	1	EA	4,500. <sup>00</sup>	4,500. <sup>00</sup>
6	L-101-5.1	Removal of Existing Beacon, including wiring @ <u>five hundred dollars + tax</u> / 1	1	EA	500. <sup>00</sup>	500. <sup>00</sup>
7	L-103-5.1	Installation of New Beacon Tip-Down Pole, 45' Mounting Height, including new foundation, wiring, and testing @ <u>seventy thousand dollars + tax</u> / 2	1	EA	70,000. <sup>00</sup>	70,000. <sup>00</sup>
8	L-101.5.1	Installation of New LED High Intensity Rotating Beacon L-802A, including wiring, and testing @ <u>twenty five thousand dollars + tax</u> / 1	1	EA	25,000. <sup>00</sup>	25,000. <sup>00</sup>
9	L-119-5.1	Installation and Mounting of Dual, Red Airport Obstruction Light on New Beacon @ <u>fifteen hundred dollars + tax</u> / 1	1	EA	1,500. <sup>00</sup>	1,500. <sup>00</sup>
10	L-107-5.2	Removal of existing Wind Cone, Pole, Foundation, and Wiring @ <u>one thousand dollars + tax</u> / 1	1	LS	1,000. <sup>00</sup>	1,000. <sup>00</sup>



11	L-107-5.2	Installation of L-807, Style I-A, Size 2 (LED) Wind Cone, pole, and Foundation, in Place Complete <i>@ fifteen thousand five hundred dollars + tax</i>	1	EA	13,500. <sup>00</sup>	13,500. <sup>00</sup>
12	L-107-5.3	Remove and Replace Segmented Circle Marker System, in Place <i>@ eight thousand dollars + tax</i>	1	EA	8,000. <sup>00</sup>	8,000. <sup>00</sup>
13	L-108-5.3	No. 8 AWG 5 kV L-824 Type C underground Cable, installed in trench, duct bank, or conduit <i>@ one dollar 25/</i>	40000	LF	1.25	50,000. <sup>00</sup>
14	L-108-5.4	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed in Trench, Including Connections/Terminations <i>@ one dollar 75/</i>	17000	LF	1.75	29,750. <sup>00</sup>
15	L-109-7.1	Removal and Disposal of L-828 Runway Constant Current Regulator within Existing Electrical Vault, in Place - per unit <i>@ two hundred fifty dollars + tax</i>	1	EA	250. <sup>00</sup>	250. <sup>00</sup>
16	L-109-7.2	Removal and disposal of Electric Panelboard within Existing Electrical Vault, in Place - per unit <i>@ two hundred fifty dollars + tax</i>	1	EA	250. <sup>00</sup>	250. <sup>00</sup>
17	L-109-7.3	Removal and disposal of Control Panel within Existing Electrical Vault, in Place - per unit <i>@ two hundred fifty dollars + tax</i>	1	EA	250. <sup>00</sup>	250. <sup>00</sup>
18	L-109-7.4	Removal and disposal of L-854 Radio Control Receiver within Existing Electrical Vault, in Place - per unit <i>@ two hundred fifty dollars + tax</i>	1	EA	250. <sup>00</sup>	250. <sup>00</sup>
19	L-109-7.6	Installation of L-828 10 kW, 3-step Runway Constant Current Regulator within Existing Electrical Vault, in Place - per unit <i>@ eighteen thousand dollars + tax</i>	1	EA	18,000. <sup>00</sup>	18,000. <sup>00</sup>
20	L-109-7.7	Installation of L-828 4 kW, 5-step PAPI Constant Current Regulator within Existing Electrical Vault, in Place - per unit <i>@ fifteen thousand five hundred dollars + tax</i>	1	EA	15,500. <sup>00</sup>	15,500. <sup>00</sup>
21	L-109-7.8	Installation of 225A Panelboard with Main Breaker within Existing Electrical Vault, in Place - per unit <i>@ ten thousand dollars + tax</i>	1	EA	10,000. <sup>00</sup>	10,000. <sup>00</sup>

22	L-109-7.9	Installation of L-821 Control Panel within Existing Electrical Vault, in Place - per unit <del>@ twenty five thousand dollars</del>	1	EA	25,000. <sup>00</sup>	25,000. <sup>00</sup>
23	L-109-7.10	Installation of L-854 Radio Control Receiver in existing vault, in Place - per unit <del>@ Seven thousand dollars</del>	1	EA	7,000. <sup>00</sup>	7,000. <sup>00</sup>
24	L-109-7.11	Supply & Install 60"W X 18"D X 72"H Steel Shelving Unit (Anchored to Wall) <del>@ fifteen hundred dollars</del>	1	LS	1500. <sup>00</sup>	1500. <sup>00</sup>
25	L-115-5.1	L-867 Electrical Junction Box, Class 1A, Size B (12") <del>@ One thousand dollars</del>	10	EA	1000. <sup>00</sup>	10,000. <sup>00</sup>
26	L-125-5.1	Runway Edge Light, L-862, LED, High Intensity, Bi-directional White/White filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in turf, complete <del>@ fifteen hundred dollars</del>	14	EA	1300. <sup>00</sup>	18,200. <sup>00</sup>
27	L-125-5.3	Runway Edge Light, L-862, LED, High Intensity, Bi-directional White/Yellow filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in turf, complete <del>@ fifteen hundred dollars</del>	39	EA	1300. <sup>00</sup>	50,700. <sup>00</sup>
28	L-125-5.4	Runway Edge Light, L-850C LED, High Intensity, Inset, Bi-directional White/Yellow filter, twelve inch (12") dia., L-868 base mounted with isolation transformer in pavement, complete <del>@ twenty eight hundred dollars</del>	1	EA	2,800. <sup>00</sup>	2,800. <sup>00</sup>
29	L-125-5.5	Runway Threshold Light, L-862E, LED, High Intensity, Bi-directional Green/Red filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in turf, complete <del>@ fifteen hundred fifty dollars</del>	16	EA	1350. <sup>00</sup>	21,600. <sup>00</sup>
30	L-125-5.11	L-858, LED Mandatory Sign, Size 2, Style 2, Class 1 (3 Module) <del>@ Seven thousand dollars</del>	6	EA	7000. <sup>00</sup>	42,000. <sup>00</sup>
31	L-125-5.13	L-858, Runway Distance Remaining Sign, Size 4, Style 3, Class 1 (1 Module) <del>@ Sixty five hundred dollars</del>	4	EA	6500. <sup>00</sup>	26,000. <sup>00</sup>
32	L-125-5.14	PAPI, L-881, LED, Style B, Class II, 4 Box, complete <del>@ twenty five thousand dollars</del>	2	EA	25,000. <sup>00</sup>	50,000. <sup>00</sup>
Total Cost Schedule A =					544,550. <sup>00</sup>	

SCHEDULE B - TAXIWAY						
Item No.	Spec. Item No.	Description	QTY	Unit	Unit Price	Cost
33	C-105	Mobilization @ <u>ten thousand dollars</u> $\$10,000$ / $\leftarrow$	1	LS	10,000. <sup>00</sup>	10,000. <sup>00</sup>
34	610	Removal of Existing Taxiway Lighting, complete, incl. wiring (existing base cans and conduit to remain) @ <u>nine hundred dollars</u> $\$900$ / $\leftarrow$	1	LS	900. <sup>00</sup>	9,000. <sup>00</sup>
35	610	Removal of Existing Taxiway Signs, complete, incl. wiring @ <u>two thousand dollars</u> $\$2,000$ / $\leftarrow$	1	LS	2,000. <sup>00</sup>	2,000. <sup>00</sup>
36	L-108-5.3	No. 8 AWG 5 kV L-824 Type C underground Cable, installed in trench, duct bank, or conduit @ <u>one dollar &amp; 25</u> $\$1.25$ / $\leftarrow$	22000	LF	1.25	27,500. <sup>00</sup>
37	L-108-5.4	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed in Trench, Including Connections/Terminations @ <u>one dollar &amp; 75</u> $\$1.75$ / $\leftarrow$	15000	LF	1.75	26,250. <sup>00</sup>
38	L-109-7.6	Installation of L-828 7.5 kW, 3-step Taxiway Constant Current Regulator within Existing Electrical Vault, in Place - per unit @ <u>seventeen thousand dollars</u> $\$17,000$ / $\leftarrow$	1	EA	17,000. <sup>00</sup>	17,000. <sup>00</sup>
39	L-125-5.8	L-861-T, LED Lamp, Elevated Base Mounted, Blue Lens, Medium Intensity Taxiway Edge Light @ <u>seven hundred dollars</u> $\$700$ / $\leftarrow$	195	EA	700. <sup>00</sup>	136,500. <sup>00</sup>
40	L-125-5.12	L-858 Guidance Sign, Size 2, Style 2, Class 1 (2 Module) @ <u>six thousand dollars</u> $\$6,000$ / $\leftarrow$	9	EA	6,000. <sup>00</sup>	54,000. <sup>00</sup>
Total Cost Schedule B =					282,850. <sup>00</sup>	

## BID SUMMARY:

TOTAL COST SCHEDULE A (RUNWAY) = 544,550.<sup>00</sup>TOTAL COST SCHEDULE B (TAXIWAY) = 282,850.<sup>00</sup>TOTAL COST SCHEDULE A & B = 827,400.<sup>00</sup>Signature: Mont A. Berto  
(Bidder)

Schedule A (Runway) - Additive Bid No. 1 (Alternate Layout)						
No.	Item No.	Description	Estimated Quantity	Unit	Unit Price in Numbers	Total Amount Per Item
41	GDOT 610	Removal of Existing Runway Lighting base can and concrete apron, complete @ <u>two hundred fifty dollars</u> <del>per</del> <u>ea</u>	10	EA	\$ <u>250.<sup>00</sup></u>	\$ <u>2500.<sup>00</sup></u>
42	GDOT 610	Removal of Existing Runway Sign concrete foundation, complete @ <u>eight hundred dollars</u> <del>per</del> <u>ea</u>	2	EA	\$ <u>800.<sup>00</sup></u>	\$ <u>1600.<sup>00</sup></u>
43	L-108-5.1	Trenching for direct-buried cable or conduit, 18-inch minimum depth @ <u>five dollars</u> <del>per</del> <u>lf</u>	2340	LF	\$ <u>5.<sup>00</sup></u>	\$ <u>11,700.<sup>00</sup></u>
44	L-110-5.2	Directional Bore Electrical Conduit, 1-way, 2-inch Conduit @ <u>thirty dollars</u> <del>per</del> <u>lf</u>	200	LF	\$ <u>30.<sup>00</sup></u>	\$ <u>6000.<sup>00</sup></u>
45	L-110-5.3	Non-Encased Electrical Conduit, 1-Way 2-inch (50 mm) C @ <u>eight dollars</u> <del>per</del> <u>lf</u> <u>75</u>	2340	LF	\$ <u>8.75</u>	\$ <u>20,475.<sup>00</sup></u>
46	L-115-5.1	L-867 Electrical Junction Box, Class 1A, Size B (12") @ <u>one thousand dollars</u> <del>per</del> <u>ea</u>	10	EA	\$ <u>1000.<sup>00</sup></u>	\$ <u>10,000.<sup>00</sup></u>
47	L-125-5.2	Concrete Apron for Runway Edge Light assembly, 36-inch dia., complete @ <u>three hundred fifty dollars</u> <del>per</del> <u>ea</u>	10	EA	\$ <u>350.<sup>00</sup></u>	\$ <u>3500.<sup>00</sup></u>
48	L-125-5.10	Concrete Foundation for L-858 Sign assembly, complete @ <u>three thousand dollars</u> <del>per</del> <u>ea</u>	2	EA	\$ <u>3000.<sup>00</sup></u>	\$ <u>6000.<sup>00</sup></u>
SCHEDULE A (RUNWAY) - ADDITIVE BID NO. 1 TOTAL					\$ <u>61,775.<sup>00</sup></u>	

Schedule B (Taxiway) - Additive Bid No. 2 (Alternate Layout 1)						
No.	Item No.	Description	Estimated Quantity	Unit	Unit Price in Numbers	Total Amount Per Item
49	GDOT 610	Removal of Existing Taxiway Lighting base can and concrete apron, complete @ <u>two hundred fifty dollars</u> <del>per</del> <u>ea</u>	75	EA	\$ <u>250.<sup>00</sup></u>	\$ <u>18,750.<sup>00</sup></u>
50	L-108-5.1	Trenching for direct-buried cable or conduit, 18-inch minimum depth @ <u>five dollars</u> <del>per</del> <u>lf</u>	5600	LF	\$ <u>5.<sup>00</sup></u>	\$ <u>28,000.<sup>00</sup></u>
51	L-110-5.2	Directional Bore Electrical Conduit, 1-way, 2-inch Conduit @ <u>thirty dollars</u> <del>per</del> <u>lf</u>	100	LF	\$ <u>30.<sup>00</sup></u>	\$ <u>3,000.<sup>00</sup></u>
52	L-110-5.3	Non-Encased Electrical Conduit, 1-Way 2-inch (50 mm) C @ <u>eight dollars</u> <del>per</del> <u>lf</u> <u>75</u>	5600	LF	\$ <u>8.75</u>	\$ <u>49,000.<sup>00</sup></u>
53	L-115-5.1	L-867 Electrical Junction Box, Class 1A, Size B (12") @ <u>one thousand dollars</u> <del>per</del> <u>ea</u>	100	EA	\$ <u>1,000.<sup>00</sup></u>	\$ <u>100,000.<sup>00</sup></u>

**Schedule B (Taxiway) Additive Bid No. 2 (Alternate Layout 1) - NOT AWARDED**

**Schedule B (Taxiway) Additive Bid No. 2 (Alternate Layout 1) - NOT AWARDED**

54	L-125-5.7	Concrete Apron for Taxiway Edge Light assembly, 36-inch dia., complete <i>@ three hundred fifty dollars + tax</i>	100	EA	\$ <u>350.00</u>	<del>\$ <u>35,000.00</u></del>
55	L-125-5.8	L-861-T, LED Lamp, Elevated Base Mounted, Blue Lens, Medium Intensity Taxiway Edge Light <i>@ seven hundred dollars + tax</i>	25	EA	\$ <u>700.00</u>	<del>\$ <u>17,500.00</u></del>
<b>SCHEDULE B (TAXIWAY) - ADDITIVE BID NO. 2 TOTAL</b>					<del>\$ <u>251,250.00</u></del>	

**Schedule B (Taxiway) - Additive Bid No. 3 (Alternate Layout 2)**

No.	Item No.	Description	Estimated Quantity	Unit	Unit Price in Numbers	Total Amount Per Item
56	GDOT 610	Removal of Existing Taxiway Lighting base can and concrete apron, complete <i>@ two hundred fifty dollars + tax</i>	110	EA	\$ <u>250.00</u>	\$ <u>27,500.00</u>
57	L-108-5.1	Trenching for direct-buried cable or conduit, 18-inch minimum depth <i>@ five dollars + tax</i>	8800	LF	\$ <u>5.00</u>	\$ <u>44,000.00</u>
58	L-110-5.2	Directional Bore Electrical Conduit, 1-way, 2-inch Conduit <i>@ thirty dollars + tax</i>	100	LF	\$ <u>30.00</u>	\$ <u>3,000.00</u>
59	L-110-5.3	Non-Encased Electrical Conduit, 1-Way 2-inch (50 mm) C <i>@ eight dollars + tax</i>	8800	LF	\$ <u>8.75</u>	\$ <u>77,000.00</u>
60	L-115-5.1	L-867 Electrical Junction Box, Class 1A, Size B (12") <i>@ one thousand dollars + tax</i>	148	EA	\$ <u>1,000.00</u>	\$ <u>148,000.00</u>
61	L-125-5.7	Concrete Apron for Taxiway Edge Light assembly, 36-inch dia., complete <i>@ three hundred fifty dollars + tax</i>	148	EA	\$ <u>375.00</u>	\$ <u>55,500.00</u>
62	L-125-5.8	L-861-T, LED Lamp, Elevated Base Mounted, Blue Lens, Medium Intensity Taxiway Edge Light <i>@ seven hundred dollars + tax</i>	40	EA	\$ <u>700.00</u>	\$ <u>28,000.00</u>
<b>SCHEDULE B (TAXIWAY) - ADDITIVE BID NO. 3 TOTAL</b>					\$ <u>383,000.00</u>	

**ADDITIVE BID SUMMARY:**TOTAL COST ADDITIVE BID NO. 1 (RUNWAY ALT) = 61,775.00~~TOTAL COST ADDITIVE BID NO. 2 (TAXIWAY ALT 1) = 251,250.00~~**NOT AWARDED**TOTAL COST ADDITIVE BID NO. 3 (TAXIWAY ALT 2) = 383,000.00~~TOTAL COST ADDITIVE BID NO. 1 + 2 = 313,025.00~~**NOT AWARDED**TOTAL COST ADDITIVE BID NO. 1 + 3 = 444,775.00Signature: Mark H. Bennett

(Bidder)

Bidder hereby acknowledges receipt of the following addenda:

Addendum No.	Dated
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

TCA Electrical Contractors Inc.  
NAME OF BIDDER

BY: May A. Benito  
NAME  
Vice-President  
TITLE

Business Address: P. O. Box 345

Omega, Ga 31775

Telephone Number 229-387-7097

Manufacturer's or  
Contractor's I.D. No. EN-006234

**SUBCONTRACTORS, SUPPLIERS AND OTHERS:**

Subcontractor/Supplier/Others	Subcontract Work Item	Dollar value of Subcontract work
<u>Grsm Electrical LLC.</u>	<u>materials</u>	<u>\$ 66,102.40</u>
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____

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N/A

**PROPOSAL GUARANTEE (5%)****DALTON MUNICIPAL AIRPORT  
DALTON, GEORGIA**

Know All Men By These Presents, that \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

has tendered the attached (cashier's or certified) check payable to CITY OF DALTON, DALTON, GEORGIA to be held, cashed, forfeited or returned, pending the fulfillment of the following obligating conditions.

The conditions of this obligation are such as to operate as a guarantee that the Contractor will fully and promptly execute a contract and cause to be executed Performance and Payment Bonds acceptable to the Sponsor, as set forth in the Proposal or bid, should the same be accepted, and that not longer than fifteen (15) days after the receipt of notification of acceptance of his proposal and the receipt by the Contractor of contract forms from the Sponsor, he will execute in his Proposal or bid, together with and accompanied by Performance and Payment Bonds, satisfactory to the Sponsor, in the amount of the contract. It is also required that the Contractor begin work within ten (10) days after notice to proceed by the Sponsor, and further agrees that within fifteen (15) days after given notice to proceed by the Sponsor to have at work all of the equipment specified, along with such other necessary equipment as set out in the Special Provisions; and that failure to perform or comply with any or all of the foregoing requirements, within the time set forth above, shall be just and adequate cause for the annulment of the award, and it is understood that, in the event of the annulment of the award, the amount of this guarantee shall immediately be at the disposal of the Sponsor, not as a penalty, but as an agreed liquidated damage. Should each and all of the foregoing conditions be fulfilled, this obligation shall be null and void, otherwise to remain in full force and effect.

In testimony whereof, the Contractor has caused these presents to be fully signed, witnessed and attested.

WITNESS: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_

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



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## PROPOSAL GUARANTEE BOND (5%)

DALTON MUNICIPAL AIRPORT  
DALTON, GEORGIAKNOW All Men By These Presents, that T.C.A. Electrical Contractors, Inc.

(hereinafter called the "Principal"). Principal and the Travelers Casualty and Surety Company of America  
a corporation created and existing under the laws of the State of CT  
with its principal office in the City of Hartford and licensed to do business in the State of  
Georgia (hereinafter called the "Surety"), is held and firmly bound unto CITY OF DALTON,  
DALTON, GEORGIA or their duly authorized representative, acting for the Sponsor, hereinafter  
called the "Sponsor"), in the full and just sum of \_\_\_\_\_  
Five Percent of Amount Bid  
\_\_\_\_\_ (\$ 5% )

good and lawful money of the United States of America, to be paid at sight, without protest, of which  
sum of money will and truly to be paid, the said Surety binds itself, its heirs, executors,  
administrators, successors and assigns, jointly and severally, firmly by these presents.

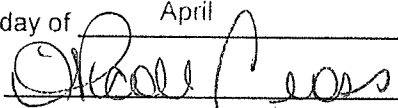
The condition of this obligation is such as to operate as a guarantee that the Principal will fully and  
promptly execute a contract and cause to be executed performance and payment bonds acceptable  
to the Sponsor, all set forth in the Proposal or bid, should the same be accepted, and that not longer  
than fifteen (15) days after the receipt by the notification of acceptance of this Proposal and this  
receipt by the Principal of contract forms from the Sponsor, he will execute a contract on the basis  
of the terms, conditions and unit prices set forth in his Proposal or bid, together with and  
accompanied by performance and payment bonds, satisfactory to the Sponsor, in the amount  
determined by the Sponsor, not to exceed the total amount of the contract; it is also required that  
the Contractor begin work within ten (10) days after notice to proceed by the Sponsor, and further  
agrees that within fifteen (15) days after given notice to proceed by the Sponsor to have at work all

of the equipment specified, along with other necessary equipment as set out in the Special Provision; and that failure to perform or comply with any or all of the foregoing requirements within the time set forth above, shall be just and adequate cause for the annulment of the award, the amount of this guarantee shall immediately be at the disposal of the Sponsor, not as a penalty, but as an agreed liquidated damage. Should each and all of the foregoing conditions be fulfilled and Performance and Payment Bonds, as set forth in the Proposal, be executed, bonds being satisfactory to the Sponsor, this obligation shall be null and void, otherwise in full force and effect.

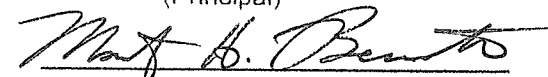
In testimony whereof, the Principal and Surety have caused these presents to be duly signed and sealed.

This 23rd day of April, A.D. 2025.

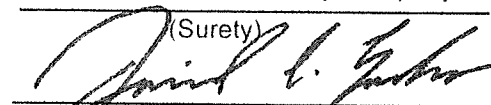
WITNESS:

  
T.C.A. Electrical Contractors, Inc.  
(Principal)

BY:

  
Travelers Casualty and Surety Company of America  
(Surety)

BY:

  
General Agent of Attorney-in-Fact  
David C. Eades, Attorney-In-Fact



NOTE: Each agent representing such Surety Company must file with the Sponsor his Power of Attorney duly executed by said Surety Company. The Surety Company must be listed on U.S. Treasury Circular 570.

TRAVELERS

Travelers Casualty and Surety Company of America  
Travelers Casualty and Surety Company  
St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

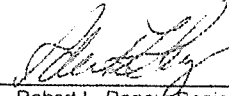
KNOW ALL MEN BY THESE PRESENTS. That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **DAVID C EADES** of **ATLANTA Georgia** their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this 21st day of April, 2021.



State of Connecticut

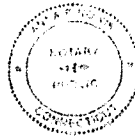
City of Hartford ss.

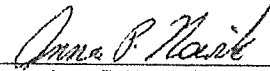
By:   
Robert L. Raney, Senior Vice President

On this the 21st day of April, 2021, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the 30th day of June, 2026





Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

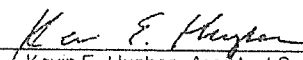
FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this

23rd day of April, 2021



  
Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.  
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.

## CERTIFICATE OF CORPORATE BIDDER

I, Nicole Cross, certify that I am <sup>Asst.</sup> Secretary of the corporation named as bidder herein, same being organized and incorporated to do business under the laws of the State of Georgia; that Marty Bennett and Vice-President who executed this proposal on behalf of the bidder were, then and there, and respectively, and that said proposal was duly signed by said officers for and in behalf of said corporation, pursuant to the authority of its governing body and within the scope of its corporate powers.

I further certify that the names and addresses of the owners of all outstanding stock of said corporation as of this date are as follows:

M. Harold Bennett  
2314 TyTy Sparks Rd.  
Omega, Ga 31775

This 23 day of April, 2025.

Nicole Cross  
Secretary

(Corporate Seal)

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W/A

**CERTIFICATE OF AUTHORITY FOR LIMITED LIABILITY CORPORATION,  
PARTNERSHIP OR SOLE OWNER**

I, the undersigned \_\_\_\_\_, am the  
\_\_\_\_\_ of \_\_\_\_\_,

a Georgia limited liability company (the "LLC") or Partnership, or Sole Owner. In order to induce CITY OF DALTON, DALTON, GEORGIA (the CITY) to enter into a contract with the LLC, Partnership, or Sole Owner executed on its behalf by me, I do hereby personally guarantee to the CITY that I, acting alone as \_\_\_\_\_, am vested with full power and authority to act for and on behalf of the LLC, Partnership, or Sole Owner in the execution of contracts between the LLC, Partnership or Sole Owner and the CITY, and any such contract(s) will be binding on the LLC, Partnership, or Sole Owner.

This \_\_\_\_\_ day of \_\_\_\_\_, 2025.

\_\_\_\_\_

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## FORM OF NONCONCLUSION AFFIDAVIT

(This Affidavit is Part of Bid)

STATE OF GeorgiaCOUNTY OF TiftMarty Bennett  
being first duly sworn, deposes and says that he/she isvice - President  
(Sole owner, a partner, president, secretary, etc.)of TCA Electrical Contractors Inc.

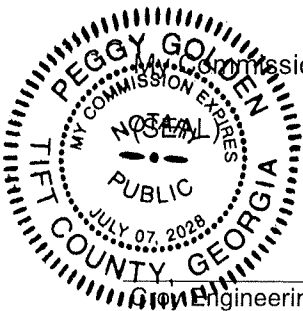
the party making the foregoing Proposal or BID that such BID is genuine and not collusive or sham; that said BIDDER has not colluded, conspired, connived, or agreed, directly or indirectly, with any BIDDER or person, to put in a sham BID, or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the Bid Price of affiant or any other BIDDER, or to fix any overhead, profit or cost element of said Bid Price, or of that of any other BIDDER, or to secure any advantage against SPONSOR any person interested in the proposed Contract; and that all statements in said Proposal or Bid are true; and further, that such BIDDER has not, directly or indirectly submitted this BID, or the contents thereof, or divulged information or data relative thereto to any association or to any member or agent thereof.

Marty H. Bennett  
(Bidder)

Sworn to and subscribed before me this

23 day of April, 2025.Peggy Golder  
Notary Public in and forCounty Tift

My Commission expires

July 07, 2028, 2028

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## CERTIFICATION OFFEROR/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The Bidder/Offeror must complete the following two certification statements. The Bidder/Offeror 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 Bidder/Offeror 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 Bidder/Offeror 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 Bidder/Offeror 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 a Bidder/Offeror 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 Bidder/Offeror therefore must provide information to the Sponsor about its tax liability or conviction to the Sponsor, 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.

Matt H. Beemto  
Signature of Bidder/Offeror

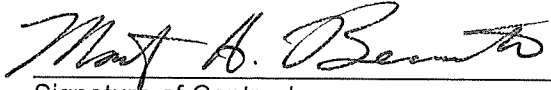
vice - President  
Title


Date: 4/23/25

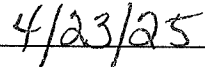
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**CERTIFICATION REGARDING DEBARMENT, SUSPENSION,  
INELIGIBILITY AND VOLUNTARY EXCLUSION**

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

  
Signature of Contractor

  
Title

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

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**CERTIFICATE OF COMPLIANCE WITH FAA BUY AMERICAN  
PREFERENCE – CONSTRUCTION PROJECTS**

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 States.
- 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) 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 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:

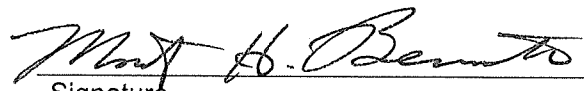
- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire including;
- b) Listing of all manufactured products that are not comprised of 100 percent U.S. domestic content (excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal 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.

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

4/23/05  
Date

  
Signature

TCA Electrical Contractors Inc. Vice-President  
Company Name Title



**CERTIFICATION REGARDING FOREIGN PARTICIPATION**

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

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

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

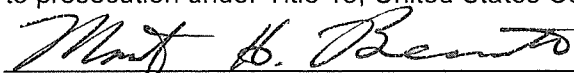
Further, the Contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. This Contractor may rely upon the certification of a prospective subcontractor unless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


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

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

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

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

  
Signature of Contractor

  
Title

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## CERTIFICATE OF NONSEGREGATED FACILITIES

The federally-assisted construction contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally-assisted construction contractor certifies that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The federally-assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are, in fact, segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally-assisted construction contractor agrees that (except where she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that she or he will retain such certifications in his files.

If the bidder has participated in a previous contract subject to the nondiscrimination clause and has not submitted compliance reports as required by applicable instructions, the bidder shall submit written evidence of required compliance prior to award and within ten (10) days after opening of bids.

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

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

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

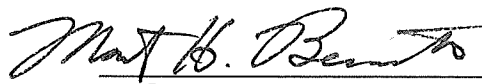
Further, the Contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier

subcontracts. The Contractor may rely upon the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

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

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

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings. This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under title 18, United States Code, Section 1001.

 4/23/05  
Contractor Date

**EQUAL OPPORTUNITY REPORT STATEMENT**

The bidder shall complete the following statement by checking the appropriate spaces. Failure to complete these blanks may be grounds for rejection of bid.

The Bidder ✓ has not \_\_\_\_\_ participated in a previous contract subject to the nondiscrimination clause prescribed by Executive Order 11246 dated 24 September, 1965, or Executive Order 11114, dated 2 June, 1963.

The Bidder \_\_\_\_\_ has not ✓ submitted compliance reports in connection with any such contract as required by applicable instructions.

If the bidder has participated in a previous contract subject to the nondiscrimination clause and has not submitted compliance reports as required by applicable instruction, the bidder shall submit written evidence of required compliance within **ten (10)** days after opening of bids.

The bidder certifies that he does \_\_\_\_\_ does not ✓ employ **fifty (50)** or more employees.

**PERFORMANCE OF WORK BY SUBCONTRACTORS**

The BIDDER hereby states that he proposes, if awarded the Contract, to use the following subcontractors on this project: List below all proposed subcontractors and trade specialties. (List only one subcontractor for each item.)

Item	Subcontractor
<u>N/A</u>	

Other (Describe)


Estimated Total Cost of Items that BIDDER states will be performed by Subcontractor(s):

(\$ 0 )

Mark H. Bement  
Signature of Contractor

Vice-President  
Title

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**REQUIREMENT OF 49 CFR PART 26 – (AS AMENDED)  
DISADVANTAGED BUSINESS ENTERPRISE**

The following bid conditions apply to this Department of Transportation (DOT) assisted contract. Submission of a bid/proposal by a prospective Contractor shall constitute full acceptance of these bid conditions.

1. Definition - Disadvantaged Business Enterprise (DBE) as used in this Contract shall have the same meaning as defined in 49 CFR Part 26, as amended.
2. Policy - It is the policy of DOT that disadvantaged business enterprise as defined in 49 CFR Part 26 shall have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with federal funds. Consequently, the DBE requirements of 49 CFR Part 26 apply to this contract.
3. DBE Obligation - The Contractor agrees to ensure that disadvantaged business enterprises as defined in 49 CFR Part 26 have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with federal funds. In this regard, all Contractors shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 to ensure that disadvantaged business enterprises have the maximum opportunity to compete for and perform contracts. Contractors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of DOT assisted contracts.
4. Compliance - All bidders, potential contractors, or subcontractors for this DOT assisted contract are hereby notified that failure to carry out the DOT policy and the DBE obligations, as set forth above, shall constitute a breach of contract which may result in termination of the contract or such other remedy as deemed appropriate by the Sponsor.
5. Subcontract Clause - All bidders and potential Contractors hereby assure that they will include the above clauses in all subcontracts which offer further subcontracting opportunities.
6. Contract Award - Bidders are hereby advised that meeting DBE subcontract goals or making an acceptable good faith effort to meet such goals are conditions of being awarded this DOT assisted contract.

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

7. Subcontract Goals - The attainment of goals established for this contract are to be measured as a percentage of the total dollar value of the contract. The goals established for this contract is 7.28% to be performed by the DBE's.
8. Available Certified DBEs - The Sponsor has developed an DBE Program and DBE Directory as required by 49 CFR Part 26. For this contract, the Sponsor will accept as certified, those DBE firms which are identified by the Small Business Administration (SBA) as 8(a) firms and those firms which are currently certified by other Department of Transportation (DOT) agencies (such as the Department of Transportation). Firms which desire certification which

do not meet the SBA or other DOT agencies previous certification criteria are required by the Sponsor to complete the DOT recommended Schedule A or Schedule B (as applicable) in its entirety before they can be certified for this contract. Copies of Schedule A or Schedule B may be obtained from Sponsor. The act of simply filling out the Schedule A or Schedule B does not mean automatic certification by the Sponsor. The rules and procedures of 49 CFR Part 26 shall govern the certification process of the Sponsor.

9. Contractor's Required Submission - Prospective Contractors shall submit with his bid the following summary of "Letters of Intent" information concerning DBE participation.

The bidder/offeror will also be required to submit the following information:

1. The names and addresses of DBE firms that will participate in the contract;
2. Written documentation of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet the contract goal;
3. Written confirmation from the DBE that it is participating in the contract as provided in the commitment made under (2);

#### MINORITY SUBCONTRACTS

Minority Subcontractor	Subcontract Work Item	Dollar value of Subcontract work
<u>Gusm Electrical</u> <u>llc.</u>	<u>materials</u>	\$ <u>66,102.40</u>
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____

#### WOMEN SUBCONTRACTS

Minority Subcontractor	Subcontract Work Item	Dollar value of Subcontract work
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____
Total Value of Subcontract Work		\$ <u>66,102.40</u>
Total Dollar Value of Base Bid		\$ <u>544,800.00</u>
Percent of Total		\$ <u>7.28</u>



If the Contractor fails to meet the DBE subcontract goals established in paragraph 7 above, the following information must be submitted with prospective Contractor's bid to assist the Sponsor in evaluating the efforts of the Contractor toward meeting DBE goals.

- a. Specify efforts used to identify and award contracts to minority businesses on this project;
  - b. Describe the method used to notify the public and minority community of your solicitation of bids, quantities, specifications and delivery schedule;
  - c. Identify the solicitation time set up in b. above and describe any follow-up action taken after the initial solicitation to determine if DBEs were interested in subcontract work;
  - d. Under this contract what work do you feel will be suitable for subcontracting?  
(1) Number of Contracts 0  
(2) Total Dollar Value \$ 0
  - e. List the name, address and bid prices of minority businesses that submitted bids for subcontracts under this project;
  - f. List DBEs that were rejected and give reasons for rejection; and,
  - g. Describe efforts made to assist DBEs in obtaining bonding or insurance and sub-mission of bids.
  - h. Other actions to secure DBE participation.
10. CONTRACTOR ASSURANCES - The bidder hereby assures that he will meet one of the following as appropriate:
- a. The DBE participation goals as established in paragraph 7 above.
  - b. The DBE participation percentage shown in paragraph 9 which was submitted as a condition of contract award.

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

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

NAME OF BIDDER:

TCH Electrical Contractors Inc.

IRS NUMBER:

58-1380872

BY:

Monty H. Bennett

TITLE:

vice-President

DATE:

4/23/25

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**CONTRACTOR - GEORGIA SECURITY AND IMMIGRATION  
COMPLIANCE ACT AFFIDAVIT AND AGREEMENT**

By executing this affidavit, the undersigned Contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of the CITY OF DALTON has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned Contractor will continue to use the federal work authorization program throughout the contract period and the undersigned Contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the Contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

135394

Federal Work Authorization/ E-Verify User Identification Number

8/8/11

Date of Authorization

TJA Electrical Contractors Inc.

Name of Contractor

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on 23<sup>rd</sup>, 2025 in Tifton (city), Ga (state).

Mary H. Bennett

Signature of Authorized Officer or Agent

Mary Bennett, vice-president

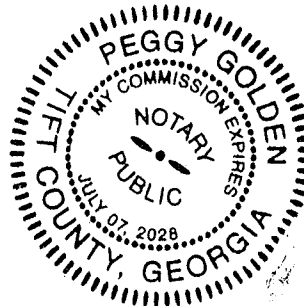
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE 23 DAY OF April, 2025.

Peggy Golden

NOTARY PUBLIC

My Commission Expires:

July 07, 2028

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N/A

**SUBCONTRACTOR - AFFIDAVIT  
UNDER O.C.G.A. § 13-10-91(b)(3)**

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with (name of contractor) on behalf of the SPONSOR NAME has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization/ E-Verify User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Sub-Contractor

\_\_\_\_\_  
Name of Project

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_, 2025 in \_\_\_\_\_ (city), \_\_\_\_\_ (state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 2025.

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

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

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**SAVE AFFIDAVIT****REQUIRED FOR LOCAL GOVERNMENT THAT MUST BE EXECUTED BY ANYONE ENTERING INTO A CONTRACT WITH A LOCAL GOVERNMENT**

STATE OF GEORGIA

WHITFIELD COUNTY, CITY By executing this affidavit under oath, as an applicant for a Whitfield County, Dalton, Georgia contract as referenced in O.C.G.A. § 50-36-1 and the August 1, 2010, "Report of the Attorney General on Public Benefits," I am stating the following with respect to my ability to enter into a contract with Whitfield County, Dalton, Georgia:

Marty Bennett  
 [Name of natural person applying on behalf of individual, business, corporation, partnership or other private entity]

As a representative of:

TOA Electrical Contractors Inc.  
 (Name of the business, corporation, partnership, or other private entity)

1) ☒ I am a United States citizen

OR

2) ☐ I am a legal permanent resident 18 years of age or older or I am an otherwise qualified alien or non-immigrant under the Federal Immigration and Nationality Act 18 years of age or older and lawfully present in the United States.\*

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of O.C.G.A. § 16-10-20.

This 23 day of April, 2025.

Signature of Applicant: Marty H. Bennett

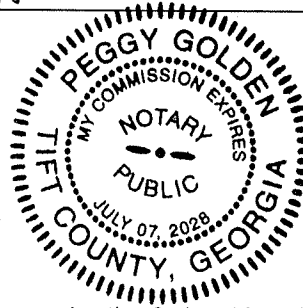
Printed Name: Marty Bennett

SUBSCRIBED AND SWORN  
 BEFORE ME ON THIS THE

23 DAY OF April, 2025

Peggy Golden  
 Notary Public

My Commission Expires: July 07, 2028



**\*Note:** O.C.G.A. § 50-36-1(e)(2) requires that aliens under the federal Immigration and Nationality Act, Title 8 U.S.C., as amended, provide their alien registration number. Because legal permanent residents are included in the federal definition of "alien," legal permanent residents must also provide their alien registration number. Qualified aliens that do not have an alien registration number may supply another identifying number below:

Alien Registration number for non-citizens: \*

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## AIRFIELD ELECTRICAL REHABILITATION

## CHECKLIST FOR BID DOCUMENTS

*Failure to include all required documents will result in proposal being removed for consideration for award.*

DOCUMENTATION DESCRIPTIONPlease check

1. Prequalification Documents
2. Proposal
3. Proposal Bid Form
4. Addenda Acknowledgement
5. Proposal Guarantee (5%)
6. Proposal Guarantee Bond (5%)
7. Certificate of Corporate Bidder OR  
Certificate of Authority for LLC, Partnership or Sole Owner
8. Form of Noncollusion Affidavit
9. Certification Regarding Debarment, Suspension, Ineligibility  
and Volunteer Exclusion
10. Buy American Certification
11. Certification Regarding Foreign Participation
12. Certification of Nonsegregated Facilities
13. Equal Opportunity Report Statement
14. Performance of Work by Subcontractors
15. Disadvantaged Business Enterprise Program
16. Contractor – Georgia Security and Immigration Compliance Act  
Affidavit and Agreement
17. Subcontractor – Georgia Security and Immigration Compliance Act  
Affidavit and Agreement
18. SAVE Affidavit
19. Proof of Insurance
20. GDOT DBE Certification
21. Bid Documents Submittal Checklist (This Page)

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*This affirms that all documents are included with the bidder's bid package.*

TCA Electrical Contractors Inc.  
Company's Name

4/23/25  
Date

Marty Bennett  
Authorized Representative's Name  
(Print or Type)

Marty H. Bennett  
Authorized Representative's Signature

END OF PROPOSAL DOCUMENTS

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**DIVISION 4 – CONTRACT DOCUMENTS****CONTRACT**

**STATE OF GEORGIA**  
**WHITFIELD COUNTY, CITY OF DALTON**

THIS AGREEMENT made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2025 by and between **CITY OF DALTON, DALTON, GEORGIA** (Party of the, First Part, hereinafter called the Sponsor) and **TCA CONTRACTORS, INC.** (Party of the Second Part, hereinafter called the Contractor).

WITNESSETH: That the said Contractor has agreed, and by these presents does agree with the said Sponsor, for the consideration herein mentioned and under the provision of the Performance Bond and Labor and Materials Payment Bond required by the Specifications to furnish all equipment, tools, materials, skill and labor of every description necessary to carry out and complete in a good, firm and substantial and workmanlike manner, the work specified, in strict conformity with the drawings and specifications, together with the foregoing proposal made by the Contractor, the Advertisement, the Instructions to Bidders, General Conditions and this Agreement, shall all form essential parts to this Agreement. The work covered by this Agreement includes all work shown on plans and specifications and listed in the conditions and specifications, to wit: Improvements to DALTON MUNICIPAL AIRPORT, DALTON, GEORGIA and CROY Engineering, LLC project No. 2106.006.

The Contractor awarded work under this contract shall commence work within **ten** days after the issuance of the Notice to Proceed. **All work shall be fully completed within SIXTY (60) Calendar Days** from the Notice to Proceed.

If said work is not completed within the time stated, the Contractor shall be liable and hereby agrees to pay the Sponsor as liquidated damages and not as a penalty, the amount of One Thousand Five Hundred Dollars (\$1,500.00) per calendar day for a delay in completion.

The Sponsor shall pay and the Contractor shall receive the prices stipulated in the proposal hereto attached as full compensation for everything furnished and done by the Contractor under this contract, the full sum of **One Million Two Hundred Seventy Two Thousand One Hundred and Seventy-Five Dollars and No Cents (\$1,272,175.00)** based on the quantities shown in the proposal which sum shall be paid in the manner and terms specified in the Contract Documents, but before issuance of certificate of payment, if the Contractor shall not have submitted evidence satisfactory to the Sponsor that all payrolls, materials bills, and other indebtedness connected with the work have been paid, the Sponsor may withhold, in addition to the retained percentages, such amount or amounts as may be necessary to pay just claims for labor and services rendered and materials in and about the work, and such amount or amounts withheld or retained may be applied by the Sponsor to the payment of such just claims

It is further mutually agreed between the Parties hereto that if, at any time after the execution of agreement and the Performance Bond for its faithful performance and the Labor and Materials Payment bond, the first party shall deem the surety or sureties upon such bond to be inadequate to cover the performance of the work, the second party shall, at its expense, within five (5) days after the receipt of notice from the first party to do so, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the first party. In such event, no further payment to the second party shall be deemed to be due under this agreement until such new or additional security for the faithful performance of the work shall be furnished in a manner and form satisfactory to the first party.

IN WITNESS WHEREOF the parties hereto have executed this agreement in triplicate this day of \_\_\_\_\_ day of \_\_\_\_\_, 2025.

ATTEST: (As to Contractor)  
Signed and sealed in the  
Presence of:

TCA Electrical Contractors Inc.

Jennifer B. Parker

L.S. By: M. T. H. B. J. L.S.

Peggy Golden

L.S. Title:

(SEAL)

ATTEST:

(SEAL)

St. Secretary

L.S.

ATTEST:(As to Sponsor)

**CITY OF DALTON  
WHITFIELD COUNTY/DALTON, GEORGIA**

By: \_\_\_\_\_ L.S. By: \_\_\_\_\_ L.S.

APPROVED AS TO FORM BEFORE EXECUTION

By: [Signature] L.S.  
Attorney for City of Dalton

**IMPROVEMENTS TO DALTON MUNICIPAL AIRPORT**  
**ELECTRICAL REHABILITATION**  
Kimley-Horn Project No. 017739003

**Contract Pay Item Summary**

TCA Electrical  
Contractors, Inc.  
P.O. Box 345  
Omega, GA 31775

Schedule A - Runway

No.	Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Amount
1	C-105	Mobilization	1	LS	\$ 35,000.00	\$ 35,000.00
2	610	Removal of Existing Runway Lighting, complete, incl. wiring (existing base cans and conduit to remain)	1	LS	\$ 3,500.00	\$ 3,500.00
3	610	Removal of Existing Runway Signs, complete, incl. wiring	1	LS	\$ 2,000.00	\$ 2,000.00
4	610	Removal of Existing 4-Box PAPI, including wiring	2	EA	\$ 500.00	\$ 1,000.00
5	L-103-5.1	Removal of Existing Beacon Tower, including old foundation and wiring	1	EA	\$ 4,500.00	\$ 4,500.00
6	L-101-5.1	Removal of Existing Beacon, including wiring	1	EA	\$ 500.00	\$ 500.00
7	L-103-5.1	Installation of New Beacon Tip-Down Pole, 45' Mounting Height, including new foundation, wiring, and testing	1	EA	\$ 70,000.00	\$ 70,000.00
8	L-101-5.1	Installation of New LED High Intensity Rotating Beacon L-802A, including wiring, and testing	1	EA	\$ 25,000.00	\$ 25,000.00
9	L-119-5.1	Installation and Mounting of Dual, Red Airport Obstruction Light on New Beacon	1	EA	\$ 1,500.00	\$ 1,500.00
10	L-107-5.2	Removal of existing Wind Cone, Pole, Foundation, and Wiring	1	LS	\$ 1,000.00	\$ 1,000.00
11	L-107-5.2	Installation of L-807, Style I-A, Size 2 (LED) Wind Cone, pole, and Foundation, in Place Complete	1	EA	\$ 13,500.00	\$ 13,500.00
12	L-107-5.3	Remove and Replace Segmented Circle Marker System, in Place	1	EA	\$ 8,000.00	\$ 8,000.00
13	L-108-5.3	No. 8 AWG 5 kV L-824 Type C underground Cable, installed in trench, duct bank, or conduit	40000	LF	\$ 1.25	\$ 50,000.00
14	L-108-5.4	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed in Trench, Including Connections/Terminations	17000	LF	\$ 1.75	\$ 29,750.00
15	L-109-7.1	Removal and Disposal of L-828 Runway Constant Current Regulator within Existing Electrical Vault, in Place - per unit	1	EA	\$ 250.00	\$ 250.00
16	L-109-7.2	Removal and disposal of Electric Panelboard within Existing Electrical Vault, in Place - per unit	1	EA	\$ 250.00	\$ 250.00
17	L-109-7.3	Removal and disposal of Control Panel within Existing Electrical Vault, in Place - per unit	1	EA	\$ 250.00	\$ 250.00
18	L-109-7.4	Removal and disposal of L-854 Radio Control Receiver within Existing Electrical Vault, in Place - per unit	1	EA	\$ 250.00	\$ 250.00
19	L-109-7.6	Installation of L-828 10 kW, 3-step Runway Constant Current Regulator within Existing Electrical Vault, in Place - per unit	1	EA	\$ 18,000.00	\$ 18,000.00
20	L-109-7.7	Installation of L-828 4 kW, 5-step PAPI Constant Current Regulator within Existing Electrical Vault, in Place - per unit	1	EA	\$ 15,500.00	\$ 15,500.00
21	L-109-7.8	Installation of 225A Panelboard with Main Breaker within Existing Electrical Vault, in Place - per unit	1	EA	\$ 10,000.00	\$ 10,000.00
22	L-109-7.9	Installation of L-821 Control Panel within Existing Electrical Vault, in Place - per unit	1	EA	\$ 25,000.00	\$ 25,000.00
23	L-109-7.10	Installation of L-854 Radio Control Receiver in existing vault, in Place - per unit	1	EA	\$ 7,000.00	\$ 7,000.00
24	L-109-7.11	Supply & Install 60"W X 18"D X 72"H Steel Shelving Unit (Anchored to Wall)	1	LS	\$ 1,500.00	\$ 1,500.00
25	L-115-5.1	L-867 Electrical Junction Box, Class 1A, Size B (12")	10	EA	\$ 1,000.00	\$ 10,000.00
26	L-125-5.1	Runway Edge Light, L-862, LED, High Intensity, Bi-directional White/White filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in turf, complete	14	EA	\$ 1,300.00	\$ 18,200.00
27	L-125-5.3	Runway Edge Light, L-862, LED, High Intensity, Bi-directional White/Yellow filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in turf, complete	39	EA	\$ 1,300.00	\$ 50,700.00
28	L-125-5.6	Runway Edge Light, L-850C LED, High Intensity, Inset, Bi-directional White/Yellow filter, twelve inch (12") dia., L-868 base mounted with isolation transformer in pavement, complete	1	EA	\$ 2,800.00	\$ 2,800.00
29	L-125-5.6	Runway Threshold Light, L-862E, LED, High Intensity, Bi-directional Green/Red filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in turf, complete	16	EA	\$ 1,350.00	\$ 21,600.00
30	L-125-5.11	L-858, LED Mandatory Sign, Size 2, Style 2, Class 1 (3 Module)	6	EA	\$ 7,000.00	\$ 42,000.00
31	L-125-5.13	L-858, Runway Distance Remaining Sign, Size 4, Style 3, Class 1 (1 Module)	4	EA	\$ 6,500.00	\$ 26,000.00
32	L-125-5.14	PAPI, L-881, LED, Style B, Class II, 4 Box, complete	2	EA	\$ 25,000.00	\$ 50,000.00
SCHEDULE A - RUNWAY TOTAL						\$ 544,550.00



Schedule B - Taxiway				
No.	Item No.	Description	Estimated Quantity	Unit
33	C-105	Mobilization	1	LS
34	610	Removal of Existing Taxiway Lighting, complete, incl. wiring (existing base cans and conduit to remain)	1	LS
35	610	Removal of Existing Taxiway Signs, complete, incl. wiring	1	LS
36	L-108-5.3	No. 8 AWG 5 kV L-824 Type C underground Cable, installed in trench, duct bank, or conduit	22000	LF
37	L-108-5.4	No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed in Trench, Including Connections/Terminations	15000	LF
38	L-109-7.6	Installation of L-828 7.5 kW, 3-step Taxiway Constant Current Regulator within Existing Electrical Vault, in Place - per unit	1	EA
39	L-125-5.8	L-861-T, LED Lamp, Elevated Base Mounted, Blue Lens, Medium Intensity Taxiway Edge Light	195	EA
40	L-125-5.12	L-858 Guidance Sign, Size 2, Style 2, Class 1 (2 Module)	9	EA
SCHEDULE B - TAXIWAY TOTAL				

TCA Electrical Contractors	
Unit Price	Total Amount
\$ 10,000.00	\$ 10,000.00
\$ 9,600.00	\$ 9,600.00
\$ 2,000.00	\$ 2,000.00
\$ 1.25	\$ 27,500.00
\$ 1.75	\$ 26,250.00
\$ 17,000.00	\$ 17,000.00
\$ 700.00	\$ 136,500.00
\$ 6,000.00	\$ 54,000.00
	\$ 282,850.00

Schedule A (Runway) - Additive Bid No. 1 (Alternate Layout)				
No.	Item No.	Description	Estimated Quantity	Unit
41	GDOT 610	Removal of Existing Runway Lighting base can and concrete apron, complete	10	EA
42	GDOT 610	Removal of Existing Runway Sign concrete foundation, complete	2	EA
43	L-108-5.1	Trenching for direct-buried cable or conduit, 18-inch minimum depth	2340	LF
44	L-110-5.2	Directional Bore Electrical Conduit, 1-way, 2-inch Conduit	200	LF
45	L-110-5.3	Non-Encased Electrical Conduit, 1-Way 2-inch (50 mm) C	2340	LF
46	L-115-5.1	L-867 Electrical Junction Box, Class 1A, Size B (12")	10	EA
47	L-125-5.2	Concrete Apron for Runway Edge Light assembly, 36-inch dia., complete	10	EA
48	L-125-5.10	Concrete Foundation for L-858 Sign assembly, complete	2	EA
SCHEDULE A (RUNWAY) - ADDITIVE BID NO. 1 TOTAL				

TCA Electrical Contractors	
Unit Price	Total Amount
\$ 250.00	\$ 2,500.00
\$ 800.00	\$ 1,600.00
\$ 5.00	\$ 11,700.00
\$ 30.00	\$ 6,000.00
\$ 8.75	\$ 20,475.00
\$ 1,000.00	\$ 10,000.00
\$ 350.00	\$ 3,500.00
\$ 3,000.00	\$ 6,000.00
	\$ 61,775.00

Schedule B (Taxiway) - Additive Bid No. 3 (Alternate Layout 2)				
No.	Item No.	Description	Estimated Quantity	Unit
49	GDOT 610	Removal of Existing Taxiway Lighting base can and concrete apron, complete	110	EA
50	L-108-5.1	Trenching for direct-buried cable or conduit, 18-inch minimum depth	8800	LF
51	L-110-5.2	Directional Bore Electrical Conduit, 1-way, 2-inch Conduit	100	LF
52	L-110-5.3	Non-Encased Electrical Conduit, 1-Way 2-inch (50 mm) C	8800	LF
53	L-115-5.1	L-867 Electrical Junction Box, Class 1A, Size B (12")	148	EA
54	L-125-5.7	Concrete Apron for Taxiway Edge Light assembly, 36-inch dia., complete	148	EA
55	L-125-5.8	L-861-T, LED Lamp, Elevated Base Mounted, Blue Lens, Medium Intensity Taxiway Edge Light	40	EA
SCHEDULE B (TAXIWAY) - ADDITIVE BID NO. 3 TOTAL				

TCA Electrical Contractors	
Unit Price	Total Amount
\$ 250.00	\$ 27,500.00
\$ 5.00	\$ 44,000.00
\$ 30.00	\$ 3,000.00
\$ 8.75	\$ 77,000.00
\$ 1,000.00	\$ 148,000.00
\$ 375.00	\$ 55,500.00
\$ 700.00	\$ 28,000.00
	\$ 383,000.00

SCHEDULE A - RUNWAY TOTAL				
SCHEDULE B - TAXIWAY TOTAL				
SCHEDULE A (RUNWAY) - ADDITIVE BID NO. 1 TOTAL				
SCHEDULE B (TAXIWAY) - ADDITIVE BID NO. 3 TOTAL				
TOTAL (SCHEDULE A + SCHEDULE B + ADDITIVE BID NO. 1 + ADDITIVE BID NO.3)				

\$	544,550.00
\$	282,850.00
\$	61,775.00
\$	383,000.00
\$	1,272,175.00

## CERTIFICATE OF CORPORATE AUTHORITY

I, Nicole Cross, certify that I am <sup>Asst</sup> Secretary of the Corporation named as Contractor herein, same being organized and incorporated to do business under the laws of the State of Georgia; that M-Hauid Bennett who executed this contract on behalf of the Contractor was, then and there, President; and that said contract was duly signed by said officer and in behalf of said corporation, pursuant to the authority and its governing body and within the scope of its corporate powers.

I further certify that the names and addresses of the owners of all the outstanding stock of said corporation as of this date are as follows:

M. Hauid Bennett  
P.O. Box 345  
Omega, Ga 31775

This \_\_\_\_\_ day of \_\_\_\_\_, 2025.

Nicole Cross

(Corporate Seal)



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N/A

**CERTIFICATE OF AUTHORITY FOR LIMITED LIABILITY  
CORPORATION, PARTNERSHIP OR SOLE OWNER**

I, the undersigned \_\_\_\_\_, am the  
\_\_\_\_\_ of \_\_\_\_\_, a Georgia  
limited liability company (the "LLC") or Partnership, or Sole Owner. In order to induce CITY OF  
DALTON (the CITY) to enter into a contract with the LLC, Partnership, or Sole Owner executed on  
its behalf by me, I do hereby personally guarantee to the CITY that I, acting alone  
as \_\_\_\_\_, am vested with full power and authority to act for and on behalf  
of the LLC, Partnership, or Sole Owner in the execution of contracts between the LLC, Partnership  
or Sole Owner and the CITY, and any such contract(s) will be binding on the LLC, Partnership, or  
Sole Owner.

This \_\_\_\_\_ day of \_\_\_\_\_, 2025.

\_\_\_\_\_

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**PERFORMANCE BOND (100%)**

KNOW ALL MEN BY THESE PRESENTS, that we, \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, licensed to do business in the State of Georgia, are held and firmly bound unto **CITY OF DALTON, DALTON, GEORGIA** as Obligee, hereinafter called the Sponsor, in the sum of \_\_\_\_\_ (\$ \_\_\_\_\_), for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally firmly by these presents.

The condition of this obligation is such, as whereas the Principal entered into a certain contract, hereto attached, with the Sponsor, dated \_\_\_\_\_ 2025, for **IMPROVEMENTS TO IMPROVEMENTS TO DALTON MUNICIPAL AIRPORT, DALTON, GEORGIA, and CROY ENGINEERING Project No. 2106.006.**

NOW, THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Sponsor, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said contract that may hereafter be made, except that no change will be made which increases the total contract price more than twenty percent in excess of the original contract price without notice to the Surety, then this obligation to be void, otherwise to remain in full force and effect.

Whenever Principal shall be, and declared by Sponsor to be in default under the Contract, the Sponsor having performed Sponsor's obligations thereunder, the Surety may promptly remedy the

default, or shall promptly:

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

Signed, Sealed and Dated this \_\_\_\_\_ day of \_\_\_\_\_, A.D., 2025.

\_\_\_\_\_  
(Principal) (SEAL)

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

\_\_\_\_\_  
(Surety) (SEAL)

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

Power of Attorney is attached.

**PAYMENT BOND (100%)**

KNOW ALL MEN BY THESE PRESENTS: That T.C.A. Electrical Contractors, Inc., as Principal, and Travelers Casualty and Surety Company of America a corporation of the State of CT with its principal office in City of Hartford (hereinafter called the Surety), as Surety, licensed to do business in the State of Georgia, are held and firmly bound unto **CITY OF DALTON, DALTON, GEORGIA** (hereinafter called the Obligee), for the use and protection of all subcontractors and all persons supplying labor, machinery, materials, and equipment in the prosecution of the work provided for in the contract hereinafter referred to in the full and just sum of One Million Two Hundred Seventy-Two Thousand One Hundred Seventy-Five & 00/100s (\$1,272,175.00), to the payment of which sum, well and truly to be made, the Principal and Surety bind themselves, their, and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract, dated the \_\_\_\_\_ day of \_\_\_\_\_, 2025, with the Obligee for **DALTON MUNICIPAL AIRPORT, DALTON, GEORGIA, and CROY ENGINEERING Project No. 2106.006** which Contract is by reference made a part hereof.

NOW, THEREFORE THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall faithfully perform said Contract according to its terms, covenants and conditions, and shall promptly pay all persons furnishing labor or material for use in the performance of said Contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

ALL persons who have furnished labor, material, machinery or equipment for use in the performance of said contract shall have a direct right of action on this Bond, provided payment has not been made in full within **ninety (90) days** after the last day on which labor was performed, materials, machinery, and equipment furnished or the subcontract completed.

PROVIDED, HOWEVER, that no suit or action shall be commenced hereunder by any person furnishing labor or material having a direct contractual relationship with a subcontractor, but no contractual relationship express or implied with the Principal:

Unless such person shall have given notice to the Principal within ninety (90) days after such person did, or performed the last of the work or labor, or furnished the last of the materials for which claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such a notice shall be served by mailing the same by registered mail, postage prepaid, in an envelope addressed to the Principal, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the State in which the aforesaid project is located, save that such service need not be made by a public officer.

PROVIDED, FURTHER, that any suit under this bond must be instituted before the expiration of one (1) year after the acceptance of the public works covered by the contract by the proper authorities.

Signed, Sealed and Dated this \_\_\_\_\_ day of \_\_\_\_\_, A.D., 2025.

**T.C.A. Electrical Contractors, Inc.** (SEAL)  
(Principal)

BY: Mr. Harold Bennett

**Travelers Casualty and Surety Company of America** (SEAL)  
(Surety)

BY: David C. Eades  
David C. Eades, Attorney-In-Fact



Power of Attorney is attached.

The Surety Company must be listed on U.S. Treasury Circular 570.

**END OF CONTRACT DOCUMENTS**





**Travelers Casualty and Surety Company of America  
Travelers Casualty and Surety Company  
St. Paul Fire and Marine Insurance Company**

**POWER OF ATTORNEY**

**KNOW ALL MEN BY THESE PRESENTS:** That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **DAVID C EADES** of **Atlanta, Georgia**, their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

**IN WITNESS WHEREOF**, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **21st** day of **April**, **2021**.



State of Connecticut

City of Hartford ss.

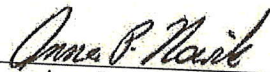
By:   
Robert L. Raney, Senior Vice President

On this the **21st** day of **April**, **2021**, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

**IN WITNESS WHEREOF**, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June**, **2026**



  
Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

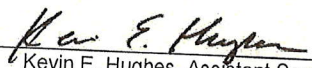
**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this \_\_\_\_\_ day of \_\_\_\_\_



  
Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.  
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.

## DIVISION 5 - FAA – General Contract Provisions

### Section 10 Definition of Terms

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

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



Paragraph Number	Term	Definition
		and/or serviced.
10-08	<b>ASTM International (ASTM)</b>	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	<b>Award</b>	The Sponsor's notice to the successful bidder of the acceptance of the submitted bid.
10-10	<b>Bidder</b>	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
10-11	<b>Building Area</b>	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
10-12	<b>Calendar Day</b>	Every day shown on the calendar.
10-13	<b>Certificate of Analysis (COA)</b>	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
10-14	<b>Certificate of Compliance (COC)</b>	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	<b>Change Order</b>	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
10-16	<b>Contract</b>	<p>A written agreement between the Sponsor and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment.</p> <p>The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by</p>

Paragraph Number	Term	Definition
		reference and issued addenda.
10-17	<b>Contract Item (Pay Item)</b>	A specific unit of work for which a price is provided in the contract.
10-18	<b>Contract Time</b>	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.
10-19	<b>Contractor</b>	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
10-20	<b>Contractors Quality Control (QC) Facilities</b>	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
10-21	<b>Contractor Quality Control Program (CQCP)</b>	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
10-22	<b>Control Strip</b>	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.
10-23	<b>Construction Safety and Phasing Plan (CSPP)</b>	The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.
10-24	<b>Drainage System</b>	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
10-25	<b>Engineer</b>	The individual, partnership, firm, or corporation duly authorized by the Sponsor to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized

Paragraph Number	Term	Definition
		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 Sponsor's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	FAA	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	Federal Specifications	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
10-30	Force Account	<p><b>a.</b> Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis.</p> <p><b>b.</b> Sponsor Force Account - Work performed for the project by the Sponsor's employees.</p>
10-31	Intention of Terms	<p>Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Sponsor.</p> <p>Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that</p>

Paragraph Number	Term	Definition
		may be pertinent to such specific reference.
10-32	<b>Lighting</b>	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	<b>Major and Minor Contract Items</b>	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	<b>Materials</b>	Any substance specified for use in the construction of the contract work.
10-35	<b>Modification of Standards (MOS)</b>	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	<b>Notice to Proceed (NTP)</b>	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.
10-37	<b>Sponsor</b>	The term "Sponsor" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Sponsor" is capitalized in this document, it shall mean airport Sponsor only. The Sponsor for this project is <b>CITY OF DALTON</b> .
10-38	<b>Passenger Facility Charge (PFC)</b>	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	<b>Pavement Structure</b>	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	<b>Payment bond</b>	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
<b>10-41</b>	<b>Performance bond</b>	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
<b>10-42</b>	<b>Plans</b>	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
<b>10-43</b>	<b>Project</b>	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
<b>10-44</b>	<b>Proposal</b>	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
<b>10-45</b>	<b>Proposal guaranty</b>	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Sponsor.
<b>10-46</b>	<b>Quality Assurance (QA)</b>	Sponsor's responsibility to assure that construction work completed complies with specifications for payment.
<b>10-47</b>	<b>Quality Control (QC)</b>	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
<b>10-48</b>	<b>Quality Assurance (QA) Inspector</b>	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
<b>10-49</b>	<b>Quality Assurance (QA) Laboratory</b>	The official quality assurance testing laboratories of the Sponsor or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Sponsor's, or QA Laboratory.
<b>10-50</b>	<b>Resident Project Representative (RPR)</b>	The individual, partnership, firm, or corporation duly authorized by the Sponsor to be responsible for all necessary inspections, observations, tests, and/or

Paragraph Number	Term	Definition
		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 Sponsor 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.
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 Sponsor 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

<b>Paragraph Number</b>	<b>Term</b>	<b>Definition</b>
		if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%; (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
<b>10-60</b>	<b>Surety</b>	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Sponsor by the Contractor.
<b>10-61</b>	<b>Taxilane</b>	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
<b>10-62</b>	<b>Taxiway</b>	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
<b>10-63</b>	<b>Taxiway/Taxilane Safety Area (TSA)</b>	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
<b>10-64</b>	<b>Work</b>	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
<b>10-65</b>	<b>Working day</b>	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.
<b>10-66</b>	<b>Sponsor Defined terms</b>	<b>None</b>

**END OF SECTION 10**

## Section 20 Proposal Requirements and Conditions

### **20-01 Advertisement (Notice to Bidders). See Advertisement in Front End Documents.**

**20-02 Qualification of bidders.** Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Sponsor 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 Sponsor 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 Sponsor.

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

**20-03 Contents of proposal forms.** The Sponsor'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 Sponsor will accept only those Proposals properly executed on physical forms or electronic forms provided by the Sponsor. Bidder actions that may cause the Sponsor to deem a proposal irregular are given in paragraph 20-09 *Irregular proposals*.

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

**20-04 Issuance of proposal forms.** The Sponsor 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 Sponsor, 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 Sponsor at the time the Sponsor issues the proposal to a prospective bidder.



- c. Documented record of Contractor default under previous contracts with the Sponsor.
- d. Documented record of unsatisfactory work on previous contracts with the Sponsor.

**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 Sponsor 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 Sponsor. 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.

Prices should generally be written in whole dollars and cents. The extended total amount of each item should not be rounded.

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 Sponsor's invitation for bid. It is the Sponsor's responsibility to decide if the exceptions taken by a bidder to the solicitation are material or not and the extent of deviation it is willing to accept.

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 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 Sponsor, or if the Sponsor's form is altered, or if any part of the proposal form is detached.
- b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.
- c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.
- d. If the proposal contains unit prices that are obviously unbalanced.
- e. If the proposal is not accompanied by the proposal guaranty specified by the Sponsor.
- f. If the applicable Disadvantaged Business Enterprise information is incomplete.

The Sponsor reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Sponsor 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 Sponsor.

**20-11 Delivery of proposal. See Instructions to Bidders**

**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 Sponsor 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 Sponsor until any such participating bidder has been reinstated by the Sponsor as a qualified bidder.
- c. If the bidder is considered to be in "default" for any reason specified in paragraph 20-04, *Issuance of Proposal Forms*, of this section.

**20-15 Discrepancies and Omissions.** A Bidder who discovers discrepancies or omissions with the project bid documents shall immediately notify the Sponsor's Engineer of the matter. A bidder that has doubt as to the

true meaning of a project requirement may submit to the Sponsor's Engineer a written request for interpretation no later than **7** days prior to bid opening.

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

**END OF SECTION 20**

## Section 30 Award and Execution of Contract

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

Until the award of a contract is made, the Sponsor 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 Sponsor reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Sponsor 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 Sponsor's best interests.

**30-02 Award of contract.** The award of a contract, if it is to be awarded, shall be made within **120** calendar days of the date specified for publicly opening proposals, unless otherwise specified herein.

If the Sponsor elects to proceed with an award of contract, the Sponsor 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 Sponsor 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 Sponsor 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 Sponsor 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 Sponsor 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 Sponsor 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 Sponsor 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 Sponsor. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

**All Bonds (Proposal, Payment and Performance) must be signed or countersigned by the surety company's proper resident agent, authorized to do business in the State of Georgia, on whom service can be made in the event of litigation.**

**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 Sponsor, along with the fully executed surety bond or bonds specified in paragraph 30-05, *Requirements of Contract Bonds*, of this section, within **15** calendar days from the date mailed or otherwise delivered to the successful bidder.

**30-07 Approval of contract.** Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the Sponsor 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 Sponsor'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 Sponsor.

**END OF SECTION 30**

## Section 40 Scope of Work

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

**40-02 Alteration of work and quantities.** The Sponsor 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 Sponsor'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 Sponsor and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the Sponsor reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

**40-03 Omitted items.** The Sponsor, the Sponsor'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, Sponsor 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 Sponsor's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, *Payment for Extra Work*. Extra work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a supplemental agreement as defined in Section 10, paragraph 10-59, *Supplemental Agreement*.

If extra work is essential to maintaining the project critical path, RPR may order the Contractor to commence the extra work under a Time and Material contract method. Once sufficient detail is available to establish the level of effort necessary for the extra work, the Sponsor 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 Sponsor.

**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.

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

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

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

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

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

**END OF SECTION 40**

## Section 50 Control of Work

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

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

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

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

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

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

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

**50-03 Coordination of contract, plans, and specifications.** The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. If electronic files are provided and used on the project and there is a conflict between the electronic files and hard copy plans, the hard copy plans shall govern. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy,

calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited advisory circulars (ACs); contract general provisions shall govern over plans, cited standards for materials or testing, and cited ACs; plans shall govern over cited standards for materials or testing and cited ACs. If any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

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

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

#### **50-04 List of Special Provisions.**

SPECIAL PROVISION: Section 100 Construction Contract Clauses – Airport Development Program

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

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

**50-06 Cooperation between Contractors.** The Sponsor 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 Sponsor from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

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

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

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

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be provided to the RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided in the following format(s): **hard copy and electronic format (pdf and AutoCAD and/or Microstation version 2004 or later).**

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 Sponsor.

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) Sponsor, authorized representatives of the Sponsors of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility Sponsor a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

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

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

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

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

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

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

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

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

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

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

Should the Contractor fail to respond to the RPR's notification, the Sponsor may suspend any work necessary for the Sponsor to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the Sponsor, 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 Sponsor, 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 Sponsor 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 Sponsor will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

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

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

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

**END OF SECTION 50**

## Section 60 Control of Materials

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

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

**Federal Contract Clauses are available at the following FAA website:**  
**[www.faa.gov/airports/aip/procurement/federal\\_contract\\_provisions/](http://www.faa.gov/airports/aip/procurement/federal_contract_provisions/)**

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 Sponsor in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), federal specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids.

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

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

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



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

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

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

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

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

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

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

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

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

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

It is understood and agreed that the Sponsor 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 Sponsor or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Sponsor'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 Sponsor 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 Sponsor furnished materials.** The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Sponsor. Sponsor-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 Sponsor-furnished materials shall be included in the unit price bid for the contract item in which such Sponsor-furnished material is used.

After any Sponsor-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 Sponsor-furnished material. The Sponsor will deduct from any monies due or to become due the Contractor any cost incurred by the Sponsor in making good such loss due to the Contractor's handling, storage, or use of Sponsor-furnished materials.

## END OF SECTION 60

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## 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 Sponsor 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.

***Effective July 1, 2008: All General Contractors must have a current valid license from the State Licensing Board for Residential and General Contractors, unless specifically exempted from holding such license pursuant to Georgia law, O.C.G.A. Section 43-41-17.***

**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 Sponsor. The Contractor and the surety shall indemnify and hold harmless the Sponsor, 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 Sponsor 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 Sponsor 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 Sponsor, such authorized work (by others) **shall be indicated in writing prior to the work being performed.**

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 Sponsor 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 Sponsors 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 Sponsor for some portion of the contract costs. The contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator. No requirement of this contract shall be construed as making the United States a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

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

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

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

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

**70-08 Construction Safety and Phasing Plan (CSPP).** The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is on sheet(s) **G-101** 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 Sponsor 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 Sponsor for such purpose may be retained for the use of the Sponsor 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 Sponsor, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

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

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

Upon completion of any portion of work listed above, such portion shall be accepted by the Sponsor 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 Sponsor 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 Sponsor shall be repaired by the Contractor at their expense.

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

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

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

**70-14 Contractor's responsibility for work.** Until the RPR's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether

arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

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

**70-15 Contractor's responsibility for utility service and facilities of others.** As provided in paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, the Contractor shall cooperate with the Sponsor of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Sponsor 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.

**Contractor shall make every effort to protect the utilities in place. Contractor shall coordinate with utility companies for relocation where necessary. Airport Sponsor and/or Engineer will provide contact information when needed. Utility companies to be contacted prior to making modifications.**

It is understood and agreed that the Sponsor 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 Sponsors 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 Sponsors advised of changes in their plan of operations that would affect such Sponsors.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Sponsor of their plan of operation. If, in the Contractor's opinion, the Sponsor's assistance is needed to locate the utility service or facility or the presence of a representative of the Sponsor 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 Sponsor'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 Sponsor 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 Sponsor and the RPR continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility Sponsor.

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 Sponsor reserves the right to deduct such costs from any monies due or which may become due the Contractor, or their own surety.

**70-16 Furnishing rights-of-way.** The Sponsor 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 Sponsor either personally or as an official of the Sponsor. It is understood that in such matters they act solely as agents and representatives of the Sponsor.

**70-18 No waiver of legal rights.** Upon completion of the work, the Sponsor will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the Sponsor from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Sponsor 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 Sponsor 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 Sponsor for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Sponsor'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 **and shall comply with 49 CFR § 18.36(i)(12).**

**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 Sponsor will direct the Contractor to either resume operations or to suspend operations as directed.

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

**70-21 Insurance Requirements.** Contractor shall purchase and maintain such comprehensive general liability, comprehensive automobile liability and other insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance and furnishing of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed or furnished by Contractor, by any Subcontractor, by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable:

1. Claims under workers' or workmen's compensation, disability benefits and other similar employee benefit acts;
2. Claims for damages because of bodily injury, occupational sickness or disease or death of Contractor's employees;
3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
4. Claims for damages insured by personal injury liability coverage which are sustained (a) by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or (b) by any other person for any other reason;
5. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use of resulting therefrom;
6. Claims arising out of operation of Laws or Regulations for damages because of bodily injury or death of any person or for damage to property; and
7. Claims for damages because of bodily injury or death of any person or property damage arising out of the Ownership, maintenance or use of any motor vehicle.

The insurance required shall include the specific coverages and be written for no less than the limits of liability and coverages specified or required by law, whichever is greater. The comprehensive general liability insurance shall include completed operations insurance. All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or

endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to Sponsor and Engineer by certified mail. All such insurance shall remain in effect until final payment and at all times thereafter when Contractor may be correcting, removing or replacing defective Work in accordance with subsection 50-18. In addition, Contractor shall maintain such completed operations insurance for at least two years after final payment and furnish Sponsor with evidence of continuation of such insurance at final payment and one year thereafter, with the exception of Sponsor's Protective Liability coverage.

**Indemnification:** In any and all claims against Sponsor or Engineer or any of their consultants, agents or employees by any employee of Contractor, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 70-11 above shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for Contractor or any such Subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

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

1. Workers' Compensation, etc.:

- |                          |           |
|--------------------------|-----------|
| a. State:                | Statutory |
| b. Applicable Federal:   | Statutory |
| (e.g. Longshoreman's)    |           |
| c. Employer's Liability: | \$500,000 |

2. Comprehensive General Liability:

- |   |   |
|---|---|
| a. Bodily Injury and Property Damage:   | Combined Single Limit<br>\$5,000,000 Per Occurrence |
| b. The Contractor's General Liability insurance shall provide coverage for the following: (1) Premises - Operations, (2) Independent Contractors, (3) Products/Completed Operations Hazard, (5) Underground Hazard, (6) Broad Form Property Damage, (7) Where applicable, Explosion and Collapse Hazard, and (8) Personal Injury. |   |

3. Comprehensive Automobile Liability:

- |   |  |
|---|--|
| a. Bodily Injury and Property Damage:   | Combined Single Limit<br>\$1,000,000(Per Occurrence) |
| b. The Contractor's Comprehensive Automobile Liability Insurance shall provide coverage for Bodily Injury and Property Damage Per Occurrence for owned, hired and non-owned vehicles. |  |

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

The Sponsor, its officials and staff and the Engineer shall be names as additional insured with respect of notice in the Policy, A Certificate of Insurance naming the Sponsor as a certificate holder shall be issued by the Contractor's insurance provider to Sponsor. Certificates in triplicate from the insurance carrier stating the limits of liability and expiration date shall be filed with Sponsor before operations are begun. Certificates shall not merely name the types of policy provided but shall specifically refer to this Contract and shall contain a separate express statement of compliance with each of the requirements as set forth in this subsection. The certificates shall, in addition to the information relative to the insurance required, contain the following:

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

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

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

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

No contract of insurance containing a "claims made" insuring agreement will be acceptable unless the Contractor offering such insurance to fulfill the requirements of this Contract agrees that each such contract of insurance shall be renewed for the entire existence of the Contractor, their successors or assigns; and that on termination of such coverage which is not replaced by a similar contract with the required limits of liability, a "tail policy" will be purchased with limits not less than those required by this Contract."

**The Contractor shall additionally provide insurance as described in Section 9 of the GDOT Construction**

**Contract with the Sponsor. Prior to beginning work, Contractor shall furnish to the Georgia Department of Transportation (the DEPARTMENT), a copy of the certificates and the endorsement page for the minimum amounts of insurance indicated below:**

1. Prior to beginning the work, the CONTRACTOR shall obtain and furnish certificates and the endorsement page to the DEPARTMENT for the following minimum amount of insurance from insurers rated at least A- by A. M. Best's and registered to do business in the State of Georgia: Commercial General Liability Insurance of at least \$1,000,000 per occurrence \$3,000,000 aggregate, including Automobile Comprehensive Liability Coverage with bodily injury in the minimum amount of \$1,000,000 combined single limits each occurrence. The DEPARTMENT shall be named as an additional insured and a copy of the policy endorsement shall be provided with the insurance certificate. The above-listed insurance coverages shall be maintained in full force and effect for the entire term of the Contract.
2. The insurance certificate must provide the following:
  - a. Name, address, signature and telephone number of authorized agents.
  - b. Name and address of insured.
  - c. Name of Insurance Company.
  - d. Description of coverage in standard terminology.
  - e. Policy number, policy period and limits of liability.
  - f. Name and address of the DEPARTMENT as certificate holder.
  - g. Thirty (30) day notice of cancellation.
  - h. Details of any special policy exclusions.
3. Waiver of Subrogation: There is no waiver of subrogation rights by either party with respect to insurance.

**70-22 Distracted Driving.** *In accordance with Executive Order 1351, "Federal Leadership on Reducing Text Messaging While Driving" (10/1/2009) and DOT Order 3902.10, "Text Messaging While Driving" (12/30/2009), the FAA encourages recipients of Federal grant funds to adopt and enforce policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or a sub-grant.*

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

**END OF SECTION 70**

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## Section 80 Execution and Progress

**80-01 Subletting of contract.** The Sponsor 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 **30%** 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 Sponsor, and shall be consummated only on the written approval of the Sponsor.

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

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

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

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

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

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

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

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

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

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; and immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) and as listed below, cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as described in 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 Sponsor 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 Sponsor. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time.

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

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

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

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

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

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

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



**80-06 Temporary suspension of the work.** The Sponsor shall have the authority to suspend the work wholly, or in part, for such period or periods the Sponsor 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 Sponsor, 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 Sponsor for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

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

**80-07 Determination and extension of contract time.** The **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 Sponsor'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 Sponsor should the Contractor fail to complete the work in the time provided in their contract.

**See Proposal Form for Schedule of Liquidated Damages.**

The maximum construction time allowed for Schedules **is shown on the Proposal Form**. 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 Sponsor 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 Sponsor 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 Sponsor consider the Contractor in default of the contract for any reason above, the Sponsor 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 Sponsor'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 Sponsor 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 Sponsor 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 Sponsor, 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 Sponsor the amount of such excess.

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

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

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

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the RPR.

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

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

## END OF SECTION 80

## Section 90 Measurement and Payment

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

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

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

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

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

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

### Measurement and Payment Terms

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

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

Term	Description
	<p>of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted.</p> <p>In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%.</p> <p>In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded.</p> <p>Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them.</p> <p>Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.</p> <p>All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.</p>
<b>Rental Equipment</b>	<p>Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 <i>Payment for Extra Work</i>.</p>
<b>Pay Quantities</b>	<p>When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.</p>

**90-02 Scope of payment.** The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature

of the work or the execution thereof, subject to the provisions of Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

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

**90-03 Compensation for altered quantities.** When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, *Alteration of Work and Quantities*, will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

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

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 Sponsor.

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

The 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. The Sponsor must ensure prompt and full payment of retainage from 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 Sponsor.

When the Sponsor 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.

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 Sponsor for protection of the Sponsor's interests. Unless otherwise instructed by the Sponsor, the amount retained by the Sponsor 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 Sponsor in accordance with Section 50-14. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Sponsor 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.
3. 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 Sponsor 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 Sponsor. When the Sponsor 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.
4. When at least 95% of the work has been completed to the satisfaction of the RPR, the RPR shall, at the Sponsor'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 Sponsor 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 Sponsor 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 Sponsor 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 Sponsor to indemnify the Sponsor against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Sponsor may be compelled to pay in discharging any such lien or claim.

**90-07 Payment for materials on hand.** Partial payments for **materials on hand are not allowed in this contract.**



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

b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Sponsor 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 Sponsor.

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 Sponsor as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

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

If the Contractor has filed a claim for additional compensation under the provisions of Section 50, paragraph 50-16, *Claims for Adjustments and Disputes*, or under the provisions of this paragraph, such claims will be considered by the Sponsor 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 Sponsor 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 Sponsor takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the project work. Light Emitting Diode emitting diode (LED) light fixtures with the exception of obstruction lighting, must be warranted by the manufacturer for a minimum of four (4) years after date of installation inclusive of all electronics.

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 Sponsor 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 Sponsor 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 Sponsor 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 Sponsor, as directed by the Sponsor, and (3) Enforce all warranties for the benefit of the Sponsor.

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

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

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

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

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

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

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

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

- g. When applicable per state requirements, return copies of sales tax completion forms.
- h. Manufacturer's certifications for all items incorporated in the work.
- i. All required record drawings, as-built drawings or as-constructed drawings.
- j. Project Operation and Maintenance (O&M) Manual(s).
- k. Security for Construction Warranty.
- l. Equipment commissioning documentation submitted, if required.

**END OF SECTION 90**

**SPECIAL PROVISION: Section 100 Construction Contract Clauses**  
**Airport Development Program**

**PART I - WAGE AND LABOR PROVISIONS**

**DAVIS-BACON REQUIREMENTS:**

**A. Minimum Wages**

1. All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.
2. (i) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
  - a. The work to be performed by the classification requested is not performed by a classification in the wage determination; and
  - b. The classification is utilized in the area by the construction industry; and

- c. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (ii) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
  - (iii) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
  - (iv) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii) (B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- 3. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- 4. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- B. **Withholding.** The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices,

trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the contractor, sponsor, applicant, or Sponsor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

C. Payrolls and basic records.

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

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

and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or Sponsor).

- (ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
  - (a) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i) and that such information is correct and complete;
  - (b) That each laborer and mechanic (including each helper, apprentice and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;
  - (c) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.
- (iv) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

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

D. Apprentices and Trainees.

1. Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
2. Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that is not



registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

3. Equal Employment Opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
- E. Compliance With Copeland Act Requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.
- F. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR Part 5.5(a)(1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.
- G. Contract Termination: Debarment. A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- H. Compliance With Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
- I. Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
- J. Certification of Eligibility.
  1. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
  2. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

3. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

K. Contract Workhours and Safety Standards Act Requirements:

1. Overtime requirements. No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basis rate of pay for all hours worked in excess of forty hours in such workweek.
2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) above, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 above, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 above.
3. Withholding for unpaid wages and liquidated damages. The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 above.
4. Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 and also a clause requiring the subcontractor to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section.
5. Working Conditions. No Contractor or subcontractor may require any laborer or mechanic employed in the performance of any contract to work in surroundings or under working conditions that are unsanitary, hazardous or dangerous to his health or safety as determined under construction safety and health standards (29 CFR Part 1926) issued by the Department of Labor.

Veteran's Preference. In the employment of labor (except in executive, administrative, and supervisory positions), preference must be given to Vietnam era veterans, Persian Gulf veterans, Afghanistan-Iraq war

veterans, disabled veterans, and small business concerns owned and controlled by disabled veterans as defined in Title 49 United States Code, Section 47112. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

Copeland “Anti-Kickback” Act Requirements:

The United States Department of Labor Wage and Hours Division oversee the Copeland “Anti-Kickback” Act Requirements. All contracts and subcontracts must meet comply with the Occupational Safety and Health Act of 1970.

United States Department of Labor Wage and Hours Division can provide information regarding any specific clauses or assurances pertaining to the Copeland “Anti-Kickback” Act Requirements required to be inserted in solicitations, contracts or subcontracts.

Federal Fair Labor Standards Act (Federal Minimum Wage)

All contracts and subcontracts that result from this solicitation incorporate the following provisions by reference, with the same force and effect as if given in full text. The contractor has full responsibility to monitor compliance to the referenced statute or regulation. The contractor must address any claims or disputes that pertain to a referenced requirement directly with the Federal Agency with enforcement responsibilities.

Requirement	Federal Agency with Enforcement Responsibilities
Federal Fair Labor Standards Act (29 USC 201)	U.S. Department of Labor – Wage and Hour

"General Decision Number: GA20250072 01/03/2025

Superseded General Decision Number: GA20240072

State: Georgia

Construction Type: Highway

Counties: Murray and Whitfield Counties in Georgia.

**HIGHWAY CONSTRUCTION PROJECTS**

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)(1).

If the contract is entered	 Executive Order 14026	
into on or after January 30,	generally applies to the	

2022, or the contract is	contract.	
renewed or extended (e.g., an	The contractor must pay	
option is exercised) on or	all covered workers at	
after January 30, 2022:	least \$17.75 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 2025.	
If the contract was awarded on	Executive Order 13658	
or between January 1, 2015 and	generally applies to the	
January 29, 2022, and the	contract.	
contract is not renewed or	The contractor must pay all	
extended on or after January	covered workers at least	
30, 2022:	\$13.30 per hour (or the	
	applicable wage rate listed	
	on this wage determination,	
	if it is higher) for all	
	hours performing on that	
	contract in 2025.	

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 <http://www.dol.gov/whd/govcontracts>.

Modification Number  
0

Publication Date  
01/03/2025

SUGA2022-012 07/12/2024

	Rates	Fringes
CARPENTER.....	\$ 32.68	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 28.44	0.00
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor.....	\$ 16.72 **	2.23
LABORER: Common or General.....	\$ 20.96	0.00

LABORER: Pipelayer.....	\$ 22.42	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 23.40	3.73
OPERATOR: Bulldozer.....	\$ 22.82	0.00
OPERATOR: Crane.....	\$ 39.31	0.00
OPERATOR: Grader/Blade.....	\$ 26.31	5.43
OPERATOR: Loader.....	\$ 22.81	1.91
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 23.22	4.10
OPERATOR: Roller.....	\$ 18.51	3.99
TRAFFIC CONTROL: Flagger.....	\$ 14.64 **	0.00
TRUCK DRIVER: Dump Truck.....	\$ 21.58	3.58

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

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\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.75) or 13658 (\$13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

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

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

#### Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 7/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

#### Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

#### Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

#### State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

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#### WAGE DETERMINATION APPEALS PROCESS

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

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to [davisbaconinfo@dol.gov](mailto:davisbaconinfo@dol.gov) or by mail to:

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations.

Requests can be submitted via email to [BCWD-Office@dol.gov](mailto:BCWD-Office@dol.gov) or by mail to:

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

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to [dba.reconsideration@dol.gov](mailto:dba.reconsideration@dol.gov) or by mail to:

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

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

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

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

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END OF GENERAL DECISION"



**PART II - EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS****A. Standard Federal Equal Employment Opportunity Construction Contract Specifications (41 CFR 60-4.3).****1. As used in these specifications:**

"Covered area" means the geographical area described in the solicitation from which this contract resulted;

"Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;

"Employer identification number" means the federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;

"Minority" includes:

- (1) Black (all persons having origins in any of the black African racial groups not of Hispanic origin);
- (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin regardless of race);
- (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast, Asia, the Indian Subcontinent, or the Pacific Islands); and
- (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).

**2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.****3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the plan area (including goals and timetables) shall be in accordance with that plan for those trades which have unions participating in the plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse**

any covered Contractor's or subcontractor's failure to take good faith efforts to achieve the plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 18.7a through 18.7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction Contractors performing construction work in a geographical area where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal Procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.
6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period and the Contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:
  - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
  - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, a 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 female sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied 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 jobsite. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to

- minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
  - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
  - l. Conduct, at least annually, an inventory and evaluation, at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
  - m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
  - n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
  - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractors and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.
  - p. Conduct a review, at least annually, of all supervisors' 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 (18.7a through 18.7p). The efforts of a Contractor association, joint Contractor-union, Contractor-community, or other similar groups of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 18.7a through 18.7p 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 work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which

demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally,) the Contractor may be in violation of the executive order if a specific minority group of women is underutilized.
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The Contractor shall not enter into any subcontract with any person or firm debarred from government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 18.7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of

requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

B. Compliance with Nondiscrimination Requirements. During the performance of this contract, the Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

1. COMPLIANCE WITH REGULATIONS. The Contractor (hereinafter includes consultants) will comply with the **Title VI List of Pertinent Nondiscrimination Statutes and Authorities**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. NONDISCRIMINATION. The Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. SOLICITATIONS FOR SUBCONTRACTS, INCLUDING PROCUREMENTS OF MATERIALS AND EQUIPMENT. In all solicitations, either by competitive bidding, or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the Contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. INFORMATION AND REPORTS. The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor will so certify to the Sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
5. SANCTIONS FOR NONCOMPLIANCE. In the event of a Contractor's noncompliance with the Non-discrimination provisions of this contract, the Sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
  - a. Withholding payments to the Contractor under the contract until the Contractor complies; and/or
  - b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. INCORPORATION OF PROVISIONS. The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the Sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the Sponsor to enter into any litigation to protect the interests of the Sponsor. In addition, the Contractor may request the United States to enter into litigation to protect the interests of the United States.
- C. Equal Employment Opportunity Clause. During the performance of this contract, the Contractor agrees as follows:
1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
  2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
  3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising that said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
  4. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
  5. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
  6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible

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

7. The Contractor will include the portion of the sentence immediately preceding paragraph 1 and the provisions of paragraphs 1 through 7 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.
8. The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the recipient deems appropriate.
9. Prompt Payment: The prime Contractor agrees to pay each subcontractor 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 received from the Sponsor. The prime Contractor agrees further to return retainage payments to each subcontractor within seven (7) days after the subcontractor's Work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Sponsor. This clause applies to both DBE and non-DBE subcontractors. Failure to comply with the prompt payment provision of the Contract may result in sanctions under the Contract, as listed below.
  - (1) Refusal to issue proposals
  - (2) Damages
  - (3) Suspension of Work on the project
  - (4) No additional progressive payments may be processed
  - (5) Suspension of prequalification



D. Notices to be Posted. The "Equal Employment Opportunity is the Law" poster is to be posted by the Contractor in a conspicuous place available to employees and applicants for employment as required by paragraphs (1) and (3) of the EEO clause. Copies of this poster will be furnished to Contractors at the preconstruction conference.

E. Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246, As Amended).

1. The Offerer'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:

A. Timetables

B. Goals for minority participation for each trade  
(Vol. 45 Federal Register pg. 65984 10/3/80)

C. 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 is also subject to the goals for both federally funded and non-federally funded construction regardless of the percentage of federal participation in funding.

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 shall be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project, for the sole purpose of meeting the Contractor's goals, shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director, Office of Federal Contract Compliance Programs (OFCCP), within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone

number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" [insert description of the geographical areas where the contract is to be performed giving the state, county, and city, if any].

F. Required Reports.

1. Monthly Employment Utilization Report. This report is to be prepared on Form CC 257 (Rev. 9-78) and sent to the Area Office, Federal Contract Compliance Program (OFCCP) that serves the geographical area in which this project is located. The report is due by the 10<sup>TH</sup> day of each month after work has commenced. The Contractor will be advised further regarding this report including the address of the OFCCP Area Office, at the preconstruction conference.
2. Annual EEO-1 Report. Contractors/Subcontractors working on federally assisted airport construction projects are required to file annually, on or before March 31, complete and accurate reports on Standard Form 100 (Employee Information Report, EEO-1). The first such report is required within 30 days after award unless the Contractor/Subcontractor has submitted such a report within 12 months preceding the date of award (the FAA or Department of Labor OFCCP can designate other intervals). This form is normally furnished based on a mailing list, but can be obtained from the Joint Reporting Committee, 1800 G. Street, NW, Washington, DC 20506. This report is required if a Contractor or Subcontractor meets all of the following conditions.
  - a. Nonexempt. Contractors/Subcontractors are not exempt based on 41 CFR 60-1.5, and
  - b. Number of Employees. Has 50 or more employees.
  - c. Contractor/Subcontractor. Is a prime Contractor of first tier subcontractor, and a financial institution which is an issuing and paying agent for US savings bonds and savings notes. Some Subcontractors below the first tier who work at the site are required to file if they meet the requirements of 41 CFR 60-1.7.
3. Records. The FAA or Department of Labor OFCCP may require a Contractor to keep employment or other records and to furnish, in the form requested within reasonable limits, such information as necessary.

G. Requirement for Certification of Nonsegregated Facilities.

1. NOTICE TO PROSPECTIVE FEDERALLY ASSISTED CONSTRUCTION CONTRACTORS.

- a. Certification of Nonsegregated Facilities shall be submitted prior to the award of a federally-assisted construction contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.
  - b. Contractors receiving federally-assisted construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of the following notice to prospective Subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause.
  - c. The penalty for making false statements in offers is prescribed in 18 U.S.C. § 1001.
2. NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS FOR CERTIFICATION OF NONSEGREGATED FACILITIES
- a. A Certification of Non-segregated Facilities shall be submitted prior to the award of a subcontract exceeding \$10,000, which is not exempt from the provisions of the Equal Opportunity Clause.
  - b. Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of this notice to prospective Subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause.
  - c. The penalty for making false statements in offers is prescribed in 18 U.S.C. § 1001.

#### **Certification of Nonsegregated Facilities**

The federally-assisted construction contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally-assisted construction contractor certifies that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The federally-assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are, in fact, segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally-assisted construction contractor agrees that (except where she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or he will obtain identical certifications from proposed subcontractors prior to the award of

subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that she or he will retain such certifications in his files.

### **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.

The above provision binds the Contractor and subcontractors from the bid solicitation period through the completion of the contract.

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

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

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-Assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27 (Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance);
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq.*) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (PL 100-259) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients,

sub-recipients and contractors, whether such programs or activities are Federally funded or not);

- Titles II and III of the Americans with Disabilities Act of 1990 (42 USC § 12101, et seq) (prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations);
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs [70 Fed. Reg. 74087 (2005)];

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

### PART III - MISCELLANEOUS CONTRACT PROVISIONS

- A. Airport Improvement Program Project. The work in this contract is included in Airport Improvement Program which is being undertaken and accomplished by the SPONSOR in accordance with the terms and conditions of a grant agreement between the SPONSOR and the United States, under the Airport and Airway Improvement Act of 1982 and Part 152 of the Federal Aviation Regulations (14 CFR Part 152), pursuant to which the United States has agreed to pay a certain percentage of the costs of the project that are determined to be allowable project costs under that Act. The United States is not a party to this contract and no reference in this contract to the FAA or any representative thereof, or to any rights granted to the FAA or any representative thereof, or the United States, by the contract, makes the United States a party to this contract.
- B. Consent to Assignment. The Contractor shall obtain the prior written consent of the SPONSOR to any proposed assignment of any interest in or part of this contract.
- C. Veterans Preference. In the employment of labor (except in executive, administrative, and supervisory positions), preference must be given to Vietnam era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns owned and controlled by disabled veterans as defined in Title 49 United States Code, Section 47112. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

- D. FAA Inspection and Review. The Contractor shall allow any authorized representative of the FAA to inspect and review any work or materials used in the performance of this contract.
- E. Subcontracts. The Contractor shall insert in each of his subcontracts the provisions contained in paragraphs A, C, and D of this section and also a clause requiring the Subcontractors to include these provisions in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.
- F. Clean Air and Water Pollution Control. (Reference 2 CFR 200 Appendix II (G)) Contractors and subcontractors agree:
1. That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;
  2. To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued thereunder;
  3. Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 USC §§ 7401-7671q) and the Federal Water Pollution Control Act as amended (33 USC §§ 1251-1387). The Contractor agrees to report any violation to the Sponsor immediately upon discovery. The Sponsor assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.
  4. That, as a condition for award of this contract, the contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;
  5. To include or cause to be included in any construction contract or subcontract which exceeds \$100,000 the aforementioned criteria and requirements.
- G. Recovered Materials. Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:
- 1) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or

- 2) The contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at [www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products](http://www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products).

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

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

H. Drug Free Workplace Certification: The CONTRACTOR must certify that they are in full compliance with the provisions of Code Sections 50-24-1 through 50-24-6 of the Official Code of Georgia Annotated, relating to the "Drug-free Workplace Act". The undersigned further certifies that:

- a. A drug-free workplace will be provided for the CONTRACTOR'S employees during performance of the contract; and
- b. Each CONTRACTOR who hires a subcontractor to work in a drug-free work place shall secure from that subcontractor the following written certification:  
"As part of the subcontracting agreement with (CONTRACTOR's name), (Subcontractor's name) certifies to the CONTRACTOR that a drug-free workplace will be provided for the subcontractor's employees during the performance of this Contract pursuant to Paragraph (7) of Sub-section (b) of Code Section 50-24-3".
- c. The CONTRACTOR further certifies that he will not engage in the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the Contract.
- d. CONTRACTOR may be suspended, terminated, or debarred if it is determined that:
  - (1) The CONTRACTOR has made false certification hereinabove; or
  - (2) The CONTRACTOR has violated such certification by failure to carry out the requirements of the Official Code of Georgia Section 50-24-3.

I. Certificate Regarding Debarment and Suspension (Bidder or Offeror).

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

Certification Regarding Debarment and Suspension (Successful Bidder Regarding Lower Tier Participants)

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

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

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

J. Termination of Contract (Reference 2 CFR 200, Appendix II).

1. The Sponsor may, by written notice, terminate this contract in whole or in part at any time, either for the Sponsor's convenience or because of failure to fulfill the contract obligations. Such action may be without cause and without prejudice to any other right or remedy of Sponsor. Upon receipt of a written notice of termination, except as explicitly directed by the Sponsor, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:
  - a. Contractor must immediately discontinue work as specified in the written notice.
  - b. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
  - c. Discontinue orders for materials and services except as directed by the written notice.
  - d. Deliver to the Sponsor all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work, and as directed in the written notice.
  - e. Complete performance of the work not terminated by the notice.
  - f. Take action as directed by the Sponsor to protect and preserve property and work related to this contract that Sponsor will take possession.

Sponsor agrees to pay Contractor for:



- a. Completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;
    - b. Documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;
    - c. Reasonable and substantiated claims, costs, and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
    - d. Reasonable and substantiated expenses to the Contractor directly attributable to Sponsor's termination action.
  2. If the termination is for the convenience of the Sponsor, an equitable adjustment in the contract price will be made, but no amount will be allowed for anticipated profit on unperformed services or other economic loss arising out of or resulting from the Sponsor's termination action.
  3. If the termination is due to failure to fulfill the Contractor's obligations, the Sponsor may take over the work and prosecute the same to completion by contract or otherwise. In such case, the Contractor is liable to the Sponsor for any additional cost occasioned to the Sponsor thereby.
  4. If, after notice of termination for failure to fulfill contract obligations, it is determined that the Contractor had not so failed, the termination shall be deemed to have been effected for the convenience of the Sponsor. In such event, adjustment in the contract price will be made as provided in paragraph 2 of this clause.
  5. The rights and remedies of the Sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.
- K. Inspection of Records (Reference 2 CFR 200.326, 200.333). 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 the 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.
- L. Rights to Inventions. All rights to inventions and materials generated under this contract are subject to regulations issued by the FAA and the Sponsor of the Federal grant under which this contract is executed. Information regarding these rights is available from the FAA and the Sponsor.
- M. Breach of Contract Terms. Any violation or breach of terms of this contract on the part of the contractor or its subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement. The duties and obligations imposed by the Contract Documents and the rights and remedies available

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

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

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

- O. Energy Conservation Requirements. The contractor agrees to comply with mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163).
- P. Foreign Trade Restrictions (DOT Regulation 49 CFR Part 30). Denial of Public Works Contracts to Suppliers of Goods and Services of Countries that Deny Contracts to Suppliers of Goods and Services of Countries that Deny Procurement Market Access to U. S. Contractors.
- Q. Occupational Safety and Health Act of 1970. All contracts and subcontracts that result from this solicitation incorporate the following provisions by reference, with the same force and effect as if given in full text. The contractor has full responsibility to monitor compliance to the referenced statute or regulation. The contractor must address any claims or disputes that pertain to a referenced requirement directly with the Federal Agency with enforcement responsibilities.

Requirement	Federal Agency with Enforcement Responsibilities
Occupational Safety and Health Act of 1970 (20 CFR Part 1910)	U.S. Department of Labor – Occupational Safety and Health Administration

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

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

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

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The

knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

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

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

**END OF SECTION 100**

**DIVISION 6 – TECHNICAL SPECIFICATIONS****SECTION 00001 - TECHNICAL SPECIFICATIONS**

All materials used shall be in accordance with FAA Specifications, or Georgia Department of Transportation, Standard Specifications Construction of Transportation Systems, 2021 Edition and Supplemental Specifications, 2024 Edition, except for electrical items of work which shall be in accordance with applicable FAA Specifications.

**END OF SECTION 00001**

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## SECTION 01010 - SUMMARY OF WORK

### PART 1 GENERAL

#### 1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General Provisions and Supplementary Conditions, Specifications sections in this manual and applicable Advisory Circular 150/5370-10H Standards for Specifying Construction of Airports or State of Georgia, Department of Transportation Standard Specification sections, as specified, apply to work of this section.
- B. Division 1 - General Requirements of the contract specifications is an integral part of the Contract Documents of the Contract.
- C. Related Requirements specified in other sections of the specifications:

Restrictions on use of site, safety requirements and work within Air Operations Areas are specified in Section 01030-Airport Project Procedures (Construction Safety Plan.)

#### 1.02 PROJECT IDENTIFICATION:

- A. Airfield Electrical Rehabilitation

#### 1.03 WORK COVERED BY CONTRACT DOCUMENTS:

- A. Work covered by the contract documents is located at the Dalton Municipal Airport, Dalton, Georgia. The work of this project includes, but is not limited to:

Base Bid: All labor, materials and supervision to upgrade the airports airfield electrical system including but not limited to the runway and taxiway lighting, rotating beacon, PAPI's, and signage utilizing existing base cans and conduits where possible. This includes testing.

#### 1.04 SUMMARY BY REFERENCES:

- A. Work of the Contract can be summarized by references to the Contract, General Provisions, Supplementary Conditions, Specification Sections, Drawings, addenda and modifications to the contract documents issued subsequent to the initial printing of this project manual and

including but not necessarily limited to printed material referenced by any of these. It is recognized that work of the Contract is also unavoidably affected or influenced by governing regulations, natural phenomenon including weather conditions and other forces outside the contract documents.

**END OF SECTION 01010**

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**SECTION 01030 - AIRPORT PROJECT PROCEDURES**  
**(CONSTRUCTION SAFETY PHASING PLAN)**

**Part 1 GENERAL**

**1.01 INTRODUCTION:**

- A. This project involves Contractor operations within active Airport Operational Areas (A.O.A.). The Airport will conduct normal aircraft operations (subject to certain restrictions which shall be called out in this section) during the course of this project. Therefore, in order to provide for the security and safety of Airport users and the Contractor's forces, as well as to minimize interruptions to aircraft operations, the Contractor shall limit his work within the areas as designated on the plans and conduct his operations as set forth in the specifications.

**THE CONTRACTOR AND ALL PERSONNEL SHALL NOT ENTER OR CROSS THE ACTIVE RUNWAYS OR TAXIWAYS WHEN THEY ARE NOT CLOSED OR WITHOUT SPECIFIC APPROVAL OF THE AIRPORT MANAGER. ANY PERSON IN VIOLATION OF A RUNWAY/TAXIWAY INTRUSION OF THE OPERATIONAL RUNWAY AREAS MAY BE CAUSE FOR DISMISSAL FROM THE PROJECT.**

**1.02 REFERENCED STANDARDS:**

- A. U.S. Department of Transportation, Federal Aviation Administration Advisory Circulars AC No. 150/5370-2G and AC No. 150/5340-1M will be used as guidelines to assist in maintaining operational safety during construction activities. These documents also refer to other applicable Advisory Circulars.
- B. Controlling Requirements: The purpose of this Construction Safety Plan is to describe the procedures, rules and requirements to be followed during construction of this project. The material set forth in this section is based upon Department of Transportation, Federal Aviation Administration Advisory Circular 150/5370-2G, Operational Safety on Airports During Construction, dated December 13, 2017, and its references and current changes. The requirements stated in the Advisory Circular, its references and current changes are minimum standards for the project. This section amends the requirements of the referenced standards. In case of a conflict between the referenced standards and this specification the more stringent requirement shall govern.

**1.03 CONTRACTOR'S RESPONSIBILITY:**

- A. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO ADHERE TO ALL SAFETY REGULATIONS OF THE SPECIFICATION, THE ADVISORY CIRCULAR, ITS REFERENCES AND CHANGES AND TO ALL OTHER ADVISORY MATERIAL PERTAINING TO OPERATIONAL SAFETY OF AIRPORTS, ESPECIALLY DURING PERIODS ON CONSTRUCTION ACTIVITY. THE CONTRACTOR WILL BE

RESPONSIBLE FOR COORDINATING AND CONTROLLING ALL CONSTRUCTION ACTIVITIES IN FULL COMPLIANCE WITH THE REQUIREMENTS OF THE REFERENCED FAA ADVISORY CIRCULARS AND THIS SAFETY PLAN.

- B. Contractor shall designate an individual in his organization responsible for all construction safety including implementation of the specific requirements of this safety plan. The individual shall instruct all Contractors' employees in the requirements of this safety plan and of construction safety in general. This individual shall also be responsible for insuring that all subcontractors have an understanding of the safety requirements.

1.04 MODIFICATIONS TO THE PLAN:

- A. Changes to the requirements of the specification will only be allowed if approved by Sponsor.

1.05 UNAUTHORIZED CROSSINGS OF ACTIVE AIRFIELD OPERATION AREAS:

- A. This safety plan requires that Contractor control the operation of his employees, equipment and Subcontractors, and that all work areas within the airfield operations area have a responsible person with a radio in constant radio contact with the airport UNICOM.

1.06 CONSTRUCTION SAFETY REQUIREMENTS:

- A.
1. Protection of Utilities: The Contractor shall be responsible for field marking and protecting all utilities within the construction limits.
  2. Storage of Equipment, Vehicles, and Materials: All equipment, vehicles, and materials must be stored in the designated storage or staging area or in areas acceptable to the Engineer.
  3. Construction Methods Limitation: No open flames or burning will be allowed on the airport property without prior approval.
  4. Safety and Accident Protection: The Contractor shall comply with all applicable federal, state, and local laws, ordinances, and regulations governing safety, health, and sanitation, and shall provide barricades, and shall take any other needed actions, on his own responsibility that are reasonably necessary to protect the life and health of employees on the job and the safety of the airport users, and to protect moving and parked aircraft and other property in connection with the performance of the work covered by the plans and specifications.

1.07 CONTRACTOR USE OF PREMISES :

- A. Use of the Site: Confine operations at the site to the areas designated on the Drawings. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work as stated on this Safety Plan while engaged in project construction.

- B. Keep existing drives, entrances, and air operations areas designated to remain open, clear and available to the Sponsor, his employees and the public at all times. Do not use these areas for parking or storage of materials.
- C. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated. If additional storage is necessary, obtain Engineer's approval.
- D. Lock automotive types vehicles, such as passenger cars and trucks, and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place.
- E. RESTRICTED AREAS

Due to the necessity to accomplish construction in areas on and adjacent to the runways and taxiways, the construction equipment, vehicles, and men are authorized to operate without interruption within the project limits.

Construction activities within these areas shall only be performed at times when the runway or taxiways are closed to aircraft.

Construction within a restricted area shall be performed in such a manner that, at the end of the closure period, the runway and taxiway areas will be clear of debris.

#### 1.08 MOTORIZED VEHICLES AND EQUIPMENT:

- A. Construction equipment and vehicles not engaged in construction during non-working hours will be parked at the Contractor's staging area indicated on the Contract Drawings.

#### 1.09 OTHER SAFETY AND SECURITY MEASURES:

- A. All areas of construction will be off-limits to personnel not involved in construction work or operations of the Airport.

#### 1.10 COMMUNICATIONS (GENERAL):

- A. All communications relating to the construction work on this project will pass through the Engineer's site representative. Engineer's site representative must be furnished the Contractor's representative's telephone number where he can be contacted on a 24 hour basis. Contractor's representative shall be available on a 24-hour basis.
- B. Radio Communication Requirements:  
The foreman of each work crew operating adjacent to or within active aircraft operating areas shall be equipped with a VHF two-way radio capable of communicating with the UNICOM frequency. The Contractor shall furnish the radios. The radio frequency of the airport UNICOM is 122.975.

PART 2 EXECUTION :2.01 GENERAL OPERATIONAL CONDITIONS AND RESTRICTIONS:

- A. This work requires the contractor to work within the Runway Safety Area (RSA) and therefore requires the runway to be shut down and NOTAM issued.
  - a. The contractor cannot work within 250 feet of the runway centerline or near any active taxiways or taxilanes. Airport operations will be impacted by the work of the contractor. Partial taxiways will be closed. Contractor can work next to the apron area as long as the airport operator agrees and that there is adequate clearance between the equipment or materials and any part of an aircraft using the apron. Appropriate NOTAMS shall be issued by airport management prior to the operation.
  - b. The contractor must get permission from the Engineer prior to use of construction equipment over 20 feet in height.

2.02 MEASUREMENT AND PAYMENT:

- A. There will be no separate measurement and payment for work specified in this Section.

**END OF SECTION 01030**

## SECTION 01150 - MEASUREMENT AND PAYMENT

### 1.01 DESCRIPTION:

- A. This section establishes the method of measurement and payment for work performed under this contract.
- B. Payment for work performed shall be made on a unit price basis in accordance with the accepted bid and the method of payment provided in the General Conditions.
- C. Related requirements in other parts of the Specifications:
  - 1. Bid (Proposal)
  - 2. Agreement
  - 3. Conditions of the Contract
- D. Related requirements specified in other sections:
  - 1. Summary of Work - Section 01010
  - 2. Submittals - Section 01300
  - 3. Contract Closeout - Section 01700
- E. No additional payment will be made for items of work for which a separate payment item is not specified herein or contained in the Bid Schedule; such work being deemed incidental to the Project and payment for said work shall be considered as included in the various unit bid prices.

### 1.02 APPLICATIONS FOR PAYMENT:

- A. Submit Applications for Payment to the Engineer in accordance with the schedule established by Conditions of the Contract and Agreement between Sponsor and Contractor.
- B. Format and Data Required
  - 1. Submit Applications for Partial Payment on the form required by Sponsor with itemized data typed on 8 ½ inch x 11 white paper continuation sheets.
  - 2. Provide itemized data on continuation sheet: Format, schedules, line items and values: Those of the Schedule of Values accepted by the Engineer.
- C. Preparation of Application for each Progress Payment
  - 1. Application Form
    - a. Fill in required information, including that for Change Orders executed prior to the date of submittal of application.

- b. Fill in summary of dollar values to agree with the respective totals indicated on the continuation sheets.
    - c. Execute certification with the signature of a responsible officer of the contract firm.
  2. Continuation Sheets
    - a. Fill in total list of all scheduled component items of work, with item number and the scheduled dollar value for each item.
    - b. Fill in the dollar value in each column for each scheduled line item when work has been performed or products stored. Round off values to the nearest dollar, or as provided in the bid.
  3. List each Change Order executed prior to the date of submission, at the end of the continuation sheets.
    - a. List by Change Order and description, as for an original component item of work.
  4. Submit Applications for Payment to Sponsor at the times stipulated in the Agreement.
    - a. Number: Four copies of each Application.
- D. Substantiating Data
  1. When the Sponsor or Engineer requires substantiating data, Contractor shall submit suitable information with cover letter identifying:
    - a. Project
    - b. Application number and date
    - c. Detailed list of enclosures
    - d. For stored products: Item number and identification as shown on application. Description of specific material.
  2. Submit one copy of data and cover letter for each copy of application.
- E. Preparation of Application for Final Payment
  1. Fill in application form as specified for Progress payments.
  2. Use continuation sheet for presenting the final statement of accounting as specified in Section 01700 - Contract Closeout.

### 1.03 CHANGE ORDER PROCEDURES:

- A. Format and Data Required
  1. Change Orders shall be prepared/submitted/ processed in accordance with requirements of General Conditions and Funding Agency Requirements.
  2. Engineer will transmit Certificate for Change to Sponsor and Agency for approval.
  3. When Sponsor and Agency approval is received, Change Order will be included under next partial Application for Payment.

**1.04 MEASURES AND WEIGHTS:**

- A. To aid the Sponsor in determining all quantities, the Contractor shall, whenever so requested, provide scales, equipment and assistance for weighing or for measuring any of the materials.
- B. It is understood and agreed that a "ton" shall mean the short ton of two thousand (2,000) pounds.
- C. Weights and measures of quantity for payment will be the actual weight or actual measure, and no special or trade or so-termed customary allowances will be made, nor will any material which is lost or misplaced be included for payment.
- D. For estimating quantities in which computation of areas by geometric methods would be comparatively laborious, it is agreed that the planimeter shall be considered an instrument of precision to the measurement of such areas.
- E. Figured dimensions on drawings shall take precedence over measurement by scale, and detailed working drawings are to take precedence over general drawings and shall be considered as explanatory of them and not as indicating extra work.

**END OF SECTION 01150**

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## SECTION 01300 - SUBMITTALS

### 1.01 GENERAL:

#### A. Submittals by Contractor:

1. Construction Progress Schedule: provide Bar Chart.
2. Certifications as specified in the various sections.
3. Shop Drawings: as specified in the various sections.
4. Operation and Maintenance Manual
5. Miscellaneous.

### 1.02 PRELIMINARY PROGRESS SCHEDULE:

#### A. Bar-Chart Schedule: Submit a bar-chart type progress schedule 10 working days after the preconstruction conference for Engineer's review. On the schedule, indicate a time bar for each major category or unit of work to be performed at the site, properly sequenced and coordinated with other elements of work. Show completion of the work sufficiently in advance of the date established for substantial completion of the work.

1. Superimpose an S-curve on the schedule to show the "estimated" total dollar-volume of work performed at any date during the Contract Time, with a column of cost figures in the left hand margin ranging from zero to the Contract Sum.
2. Submittal Tabulation: With the bar-chart submittal, submit a tabulation, by date, of the submittals which are required during Construction Time. At the Contractor's option, submittal dates may be shown on the bar-chart schedule, in lieu of being tabulated.

#### B. Update and distribute copies of schedule monthly.

### 1.03 SHOP DRAWINGS AND PRODUCT DATA:

#### A. Submit shop drawings, certifications, and product data for all products to be incorporated in the Work.

#### B. Shop Drawings will:

1. Be original drawings, prepared by the Contractor, subcontractor, supplier or distributor, which illustrate some portion of the work; showing fabrication, layout, setting, or erection details. The submittal will include contractor stamp and certification that the submittal meets the job specifications. If not, show details and reasons for requested variance.

2. Be prepared by a qualified detailer.
  3. Identify details by reference to sheet and detail numbers shown on Contract Drawings.
- C. Product Data will:
1. Include manufacturer's standard schematic drawings. The Contractor will:
    - a. Modify drawings to delete information, which is not applicable to project.
    - b. Supplement standard information to provide additional information applicable to project.
  2. Include manufacturer's catalog sheets, standard color charts, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.
- Contractor will:
- a. Clearly mark each copy to identify pertinent materials or products.
  - b. Show dimensions and clearances required.
  - c. Show performance characteristics and capacities.
- D. The Contractor will be responsible for all submittals and will:
1. Review Shop Drawings and Product Data prior to submission.
  2. Verify:
    - a. Field Measurements
    - b. Field Construction criteria
    - c. Catalog numbers and similar data
  3. Coordinate each submittal with the requirements of the work and of the Contract Documents.
  4. PRIOR TO SUBMISSION TO THE ENGINEER, A CONTRACTOR IS TO REVIEW AND APPROVE ALL SHOP DRAWINGS. BY THIS REVIEW AND APPROVAL, THE CONTRACTOR REPRESENTS THAT IT HAS DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, FIELD CONSTRUCTION CRITERIA, MATERIALS, CATALOGUE NUMBERS AND SIMILAR DATA, AND THAT IT HAS CHECKED AND COORDINATED EACH SHOP DRAWING WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS. THE CONTRACTOR IS TO INDICATE ITS REVIEW AND APPROVAL BY INCLUDING THE DATE AND THE SIGNATURE OF A RESPONSIBLE PERSON ON EACH SHOP DRAWING.
  5. Notify the Engineer, in writing at time of submission, of deviations in submittals from requirements of the Contract Documents.
  6. Begin no work which requires submittals until the return of submittals with the Engineer's stamp and initials or signature indicating review.
  7. After the Engineer's review, distribute copies.

- E. Contractor's responsibility for errors and omissions in submittals is not relieved by the Engineer's review of submittals.
- F. CONTRACTOR'S RESPONSIBILITY FOR DEVIATIONS IN SUBMITTALS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS IS NOT RELIEVED BY THE ENGINEER'S REVIEW OF SUBMITTALS, UNLESS THE ENGINEER GIVES WRITTEN ACCEPTANCE OF SPECIFIC DEVIATIONS.
- G. Submission requirements will include:
1. THE SHOP DRAWINGS SHALL BE SUBMITTED IN SUFFICIENT TIME TO ALLOW DISCUSSION AND CORRECTION PRIOR TO BEGINNING THE WORK. WORK SHALL NOT BE PERFORMED NOR MATERIALS ORDERED PRIOR TO THE REVIEW OF THE DRAWINGS EXCEPT AT THE CONTRACTOR'S RISK.
  2. SUBMIT THREE COPIES OF ALL SHOP DRAWINGS AFTER WHICH ONE COPY WILL BE RETURNED FOR CORRECTION OR MARKED REVIEWED AS NOTED. ANY DRAWINGS RETURNED FOR CORRECTION MUST BE RESUBMITTED IN TRIPLICATE.
  3. ALL SUBMITTALS MUST BE ACCOMPANIED BY A TRANSMITTAL LETTER, IN DUPLICATE, CONTAINING:
    - a. Date
    - b. Project title and number
    - c. Contractor's name and address
    - d. The number of each Shop Drawing and Product Data submitted
    - e. Notification of deviations from Contract Documents
    - f. Other pertinent data
  4. Submittals shall include:
    - a. Data and revision dates
    - b. Project title and number
    - c. The names of:
      - (1) Engineer
      - (2) Contractor
      - (3) Subcontractor
      - (4) Supplier
      - (5) Manufacturer
      - (6) SEPARATE DETAILER WHEN PERTINENT
    - d. Identification of product or material
    - e. Relation to adjacent structure or materials
    - f. Field dimensions, clearly identified as such
    - g. Specification section number
    - h. Applicable standards, such as ASTM number or Federal Specification
    - i. A blank space, 5 in. x 5 in., for the Engineer's stamp
    - j. Identification of deviations from the Contract Documents
    - k. Contractor's stamp, initialed or signed, certifying Contractor's review of submittal, verification of field measurements, and compliance with Contract Documents.

H. Resubmission requirements shall include:

1. Revision of initial drawings as required and resubmittal, as specified, for initial submittal.
2. An indication on the drawings of any changes which have been made, other than those requested by the Engineer.
3. On Product Data submittals, include new data as required for initial submittal.

After review and approval, the Contractor will distribute copies of Shop Drawings and Product Data which carry the Engineer's stamp to others as may be required.

I. Shop Drawings and Product Data:

Submit notarized certifications consigned by manufacturer/supplier and Contractor for:

- a. Fuel System Products
- b. All other products as required by Engineer.

J. Equipment Manual - Provide two (2) copies of operating and maintenance data in the form of Operation and Maintenance Manuals (O & M Manuals). The manuals shall be in 3-ring binders and developed into suitable sets of manageable size. The manual shall cover the fuel storage and dispensing system and the fuel management system. The manuals should at a minimum include the following:

1. Approved Shop Drawings on each piece of equipment and specialty items furnished.
2. Maintenance operation and lubrication instruction, parts lists, and control and wiring diagrams on each piece of equipment furnished.
3. Dispenser pump control diagram prepared by the manufacturer
4. A "one-line diagram" and troubleshooting guide to help the user to determine what steps must be taken to correct any problem that may exist in the system.
5. Brief description of each system and components, starting and stopping procedures and emergency instructions and inspection, reporting and record keeping procedures, and forms.
6. Manufacturer's warranties.

1.04 MISCELLANEOUS:

A. EEO Reports:

1. Contractor shall submit Monthly Employment Utilization Report and Annual EEO-1 Report to the appropriate Federal Labor Area Office in accordance with Section 120 of the General Conditions. Submit copy of submittal to Sponsor for his records.
2. Prime Contractor shall insure that all his first tier subcontractors submit these reports and shall submit a sworn statement to Sponsor monthly certifying that all subcontractor reports have been submitted as required.

**END OF SECTION 01300**

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## **SECTION 01510 - TEMPORARY FACILITIES**

### **1.01 DESCRIPTION:**

- A. Contractor shall furnish, install and maintain temporary facilities required for construction; remove on completion of Work.
- B. Related requirements specified in other sections: The respective Sections of the Specifications.

### **1.02 REQUIREMENTS OF REGULATORY AGENCIES:**

- A. Comply with national electric code.
- B. Comply with Federal, State, and Local codes and regulations and with utility company requirements.

### **1.03 MATERIALS - GENERAL:**

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

### **1.04 TEMPORARY ELECTRICITY AND LIGHTING:**

- A. Provide temporary electrical service required for power, lighting, and field offices, and pay all costs for service and for power used.

### **1.05 TEMPORARY WATER:**

- A. Provide water for construction purposes; pay all costs for installation, maintenance and removal, and service charges for water used.
- B. The site is served by a well owned by the Airport Sponsor. The Contractor shall provide and pay all costs for water required for the performance of the work.

### **1.06 TEMPORARY SANITARY FACILITIES:**

- A. Provide sanitary facilities in compliance with laws and regulations.
- B. SERVICE, CLEAN AND MAINTAIN FACILITIES AND ENCLOSURES.

### **1.07 TEMPORARY SUPPORT FACILITIES:**

- A. General: Provide a reasonably neat and uniform appearance in temporary Support Facilities acceptable to the Engineer and the Sponsor.
- B. Locate field offices, storage and fabrication sheds and other support facilities for easy access to the Work. Position offices so that windows give the best possible view of construction activities.
- C. Maintain field offices, storage and fabrication sheds, temporary sanitary facilities, waste collection and disposal systems, and project identification and temporary signs until near substantial completion. Immediately prior to substantial completion remove these facilities.
- D. Access Roads:
  - 1. Location of access roads will be approved by the Engineer and will be set to minimize conflict with the Airport operations and shall be maintained, be well defined and be confined to the minimum area required.
  - 2. The Contractor shall construct the access roads and shall maintain the roads as required to create no dust. All project traffic must be routed through these areas. The Contractor shall provide all markings required to clearly define the access roads.
  - 3. The Contractor may be required to obtain driveway permits for certain access roads. If access roads cross a utility, the Contractor shall protect the utility as directed by the Sponsor of the utility.

#### 1.08 EXECUTION - GENERAL:

Maintain and operate systems to assure continuous service.

#### 1.09 REMOVAL:

Completely remove temporary materials and equipment when their use is no longer required. Clean and repair damage caused by temporary installations or use of temporary facilities.

#### 2.01 MEASUREMENT AND PAYMENT:

THERE WILL BE NO SEPARATE MEASUREMENT AND PAYMENT FOR WORK SPECIFIED IN THIS SECTION.

**END OF SECTION 01510**



## **SECTION 01600 - MATERIAL AND EQUIPMENT**

### **1.01 GENERAL:**

- A. All material and equipment (products) incorporated into the work shall:
  - 1. Conform to applicable specifications and standards.
  - 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Engineer.
  - 3. Do not use material or equipment for any purpose other than that for which it is designed or is specified.
- B. Related requirements in other parts of the project manual:
  - 1. Conditions of the Contract.
- C. Standardization
  - 1. Unless otherwise approved by the Engineer, items of a similar type and function shall be furnished by one manufacturer to standardize on matters and to avoid a division of responsibility among several manufacturers.

### **1.02 PRODUCT SUBSTITUTIONS AND OPTIONS:**

- A. Products List
  - 1. Contractor shall submit a complete list of products to be incorporated into the work (with the name of the installing contractor) at the Preconstruction conference required by these specifications.
- B. Contractor's Options
  - 1. For products specified only by reference standard, select any product meeting that standard.
  - 2. For products specified by naming several products, select any one of the products named, which complies with the specifications.
- C. Product Specifications
  - 1. Contractor shall submit, at the Preconstruction Conference, all requests for product substitutions. No requests for substitutions will be accepted from manufacturers or suppliers.

2. SUBMIT A SEPARATE WRITTEN REQUEST FOR EACH PRODUCT, SUPPORTED WITH COMPLETE DATA, WITH DRAWINGS AND SAMPLES AS APPROPRIATE, INCLUDING:
    - a. Comparison of the qualities of the proposed substitution with that specified.
    - b. Changes required in other elements of the work because of the substitution.
    - c. Effect on the construction schedule.
    - d. Cost data comparing the proposed substitution with the product specified.
    - e. Any required license fees or royalties.
  3. Engineer shall be the judge of the equality and acceptability of the proposed substitution.
  4. If Engineer determines the proposed substitute product is not "equal" to the specified product, the Contractor must provide the specified product.
  5. No further requests for substitutions will be considered after Preconstruction Conference.
- D. Contractor's Representation
1. A request for a substitution constitutes a representation that Contractor;
    - a. Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified.
    - b. Will provide the same warranties for the substitution as for the product specified.
    - c. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.
- E. Engineer will review requests for substitutions with reasonable promptness and notify Contractor, in writing, of the decision to accept or reject the requested substitution.

### **1.03 MANUFACTURER'S INSTRUCTIONS:**

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, Contractor shall obtain and distribute copies of such instructions to parties involved in the installation, including copies to Engineer.
1. Maintain one set of complete instructions at the job site during installation and until completion.
- B. Handle, install, connect, clean, condition, and adjust products in strict accord with such instructions and in conformity with specified requirements.
1. SHOULD JOB CONDITIONS OR SPECIFIED REQUIREMENTS CONFLICT WITH MANUFACTURER'S INSTRUCTION, CONSULT WITH ENGINEER FOR FURTHER INSTRUCTIONS.
  2. Do not proceed with work without clear instructions.

- C. Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

**1.04 TRANSPORTATION AND HANDLING:**

- A. Contractor shall arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.
1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
  2. Immediately on delivery, inspect shipments to assure compliance with requirements of contract documents and approved submittals, and that products are properly protected and undamaged.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage of products or packaging.

**1.05 STORAGE AND PROTECTION:**

- A. Store products in accord with manufacturer's instructions, with seals and labels intact and legible.
1. Store products subject to damage by the elements in weather tight enclosures.
  2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
- B. Exterior storage
1. Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
  2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. ARRANGE STORAGE IN A MANNER TO PROVIDE EASY ACCESS FOR INSPECTION. MAKE PERIODIC INSPECTIONS OF STORED PRODUCTS TO ASSURE THAT PRODUCTS ARE MAINTAINED UNDER SPECIFIED CONDITIONS, AND FREE FROM DAMAGE OR DETERIORATION
- D. Protection after installation
1. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

**END OF SECTION 01600**

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## **SECTION 01700 - CONTRACT CLOSEOUT**

### **1.01 GENERAL:**

- A. Comply with requirements stated in conditions of the contract and in specifications for administrative procedures in closing out the work.
- B. Related requirements in other parts of the Project Manual:
  - 1. Fiscal provisions, legal submittals and additional administrative requirements: Conditions of the contract.
- C. Related Requirements Specified in Other Sections:
  - 1. Closeout submittals required of trades: The respective sections of specifications.

### **1.02 SUBSTANTIAL COMPLETION:**

- A. The conditions and procedures for inspection; and Contractor's, Engineer's and Sponsor's responsibilities pertaining to Substantial Completion are as specified in Section 50 of the General Conditions.

### **1.03 FINAL INSPECTION:**

- A. Shall be in accordance with conditions and procedures outlined in the General Provisions.
- B. When Engineer finds that the work is acceptable under the Contract Documents, he will request required Contractor's Closeout Submittals.

### **1.04 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER:**

- A. Evidence of payment and release of liens: To requirements of General and Supplementary Conditions.
- B. Certificates of Insurance for products and completed operations.
- C. Evidence of compliance with requirements of governing authorities:
  - 1. CERTIFICATES OF INSPECTION

**END OF SECTION 01700**

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## **SECTION 01710 - CLEANING AND DISPOSAL**

### **PART 1 GENERAL:**

#### **1.01 DESCRIPTION:**

- A. Contractor shall execute cleaning during progress of the work and at completion of the work, as required by General Provisions.

#### **1.02 DISPOSAL REQUIREMENTS:**

- A. Conduct cleaning and disposal operations to comply with all local, state and federal codes, ordinances, regulations, and anti-pollution laws.
- B. Disposal of waste soil materials may be onsite or off-site at approved locations, at Contractor's option.
- C. Contractor shall be responsible for arranging for and obtaining off-site disposal areas, including payment for all costs associated with such disposal.

### **PART 2 EXECUTION:**

#### **2.01 CLEANING:**

- A. Execute periodic cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.
- B. Provide on-site containers for the collection of waste materials, debris and rubbish.
- C. Remove waste materials, debris and rubbish from the site periodically and dispose of at approved locations.

**END OF SECTION 01710**

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## **SECTION 01720 - PROJECT RECORDS DOCUMENTS**

### **1.01 GENERAL:**

- A. Contractor shall maintain at the site as specified herein for the Sponsor one record copy of:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change orders and other modifications.
  - 5. Engineer field orders or written instructions.
  - 6. Approved shop drawings, product data and samples.
  - 7. Field test records.
- B. Related requirements in other parts of the Project Manual:
  - 1. Conditions of the Contract.

### **1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES:**

- A. Store documents and samples in Contractor's field office apart from documents used for construction.
- B. File documents and samples in accordance with data filing format of the Construction Specifications Institute - MASTERFORMAT.
- C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and samples available at all times for inspection by Engineer.

### **1.03 RECORDING:**

- A. Stamp or label each document "PROJECT RECORD" in 3/4" letters.
- B. During the daily progress of the Work, the job superintendent for the Contractor shall record information concurrently with construction progress.
  - 1. Do not conceal any work until required information is recorded.
- C. DRAWINGS: LEGIBLY MARK TO RECORD ACTUAL CONSTRUCTION IN THE COLOR CODES DESIGNATED BY THE ENGINEER.
- D. Record Information includes but is not limited to the following:

1. Depths of various elements of foundation in relation to finish reference datum.
  2. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
  4. Field changes of dimension and detail.
  5. Changes made by field order or by change order.
  6. Details not on original Contract Drawings.
- E. Specifications and addenda; legibly mark each section to record:
1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
  2. Changes made by field order or by change order.
- F. All horizontal control dimensions shall be to the nearest tenth of a foot. Elevations shall be to the nearest one-hundredths of a foot.

**1.04 SUBMITTAL:**

- A. At the close of the job and prior to receipt of final payment, the Contractor shall deliver to Engineer for Sponsor one complete set of Record Documents.
- B. Accompany submittal with transmittal letter containing:
1. Date.
  2. Project title and number.
  3. Contractor's name and address.
  4. Title and number of each record document.
  5. SIGNATURE OF CONTRACTOR OR HIS AUTHORIZED REPRESENTATIVE.

**END OF SECTION 01720**

## SECTION 01740 - WARRANTIES AND BONDS

### 1.01 GENERAL:

- A. Contractor shall:
1. Compile specified warranties and bonds.
  2. Compile specified service and maintenance contracts.
  3. Co-execute submittals to verify compliance with Contract Documents.
  4. Review submittals to verify compliance with Contract Documents.
  5. Submit to Engineer for review and transmittal to Sponsor.
  6. Related requirements in other parts of the Project Manual:
    - a. Bid Bonds: Instructions to bidders.
    - b. Performance Bond and Payment Bond: conditions of the contract.
    - c. General warranty of construction: conditions of the contract.
- B. Related Requirements Specified in other Sections:
1. Contract closeout: Section 01700
  2. Equipment Manuals: Section 01300
  3. Warranties and Bonds required for specific products: Each respective section of specifications as listed below.

### 1.02 SUBMITTAL REQUIREMENTS:

- A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.

The contractor shall warrant that all labor and materials furnished and work performed are in accordance with the Contract Documents and authorized modifications thereto, and will be free from defect due to defective materials or workmanship for a period of one year from Date of Substantial Completion.

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

- B. Number of original signed copies required: **Two** each.
- C. TABLE OF CONTENTS: NEATLY TYPED, IN ORDERLY SEQUENCE. PROVIDE COMPLETE INFORMATION FOR EACH ITEM.
1. Product or work item.
  2. Firm, with name of principal, address and telephone number.

3. Scope.
4. Date of beginning of warranty, bond or service and maintenance contract.
5. Duration of warranty, bond or service maintenance contract.
6. Provide information for Sponsor's personnel:
  - a. Proper procedure in case of failure.
  - b. Instances which might affect the validity of warranty or bond.
7. Contractor, name of responsible principal, address and telephone number.

#### 1.03 FORM OF SUBMITTALS:

- A. Prepare in duplicate packets.
- B. Format Size 8 ½ inches x 11 inches, punch sheets for 3-ring binder.  
Fold larger sheets to fit into binders.  
  
Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS."  
List:
  - a. Project title and number.
  - b. Sponsor's name.
  - c. Contractor's name and address.
- C. Binders: Commercial quality, 3-.ring, with durable and cleanable plastic covers.

#### 1.04 TIME OF SUBMITTALS:

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

#### 1.05 SUBMITTALS REQUIRED:

- A. Submit warranties, bonds, service and maintenance contracts as specified in the respective sections of specifications.

**END OF SECTION 01740**

## **DIVISION 8 – GDOT – Specifications**

### **Section 610 – Removal of Miscellaneous Roadway Items**

#### **610.1 General Description**

This work includes removing, salvaging, or disposing of items listed in the Proposal as Pay Items to be removed, and backfilling the excavations made during removal.

Remove structures not separately listed as Pay Items in the Contract as specified in Sections 201, 202, or 205.

##### **610.1.01 Definitions**

General Provisions 101 through 150.

##### **610.1.02 Related References**

###### **A. Standard Specifications**

Section 201—Clearing and Grubbing Right-of-Way

Section 202—Random Clearing and Grubbing

Section 205—Roadway Excavation

Section 208—Embankments

Section 540—Removal of Existing Bridge

Section 611—Relaying, Reconstructing, or Adjusting to Grade of Miscellaneous Roadway Structures

###### **B. Referenced Documents**

General Provisions 101 through 150.

##### **610.1.03 Submittals**

General Provisions 101 through 150.

#### **610.2 Materials**

##### **610.2.01 Delivery, Storage, and Handling**

###### **A. Materials Retained by the Department**

Unless removed under Sections 201, 202, or 205, or unless otherwise provided for in the Plans or Proposal, carefully remove materials with a salvage value.

1. Neatly stack or stockpile the materials along the right-of-way near the removal point and above high water.

2. Store highway signs standing on edge and protected from the elements.
3. Replace materials damaged, defaced, or destroyed by removing them carelessly at no cost to the Department.
4. Notify the Engineer when the materials have been stockpiled and are ready to be transported.
5. Keep materials secure and replace (at the Contractor's expense) materials lost, stolen, or missing within a maximum of 10 days after the Engineer has been notified that the materials are ready to be transported.

**B. Materials Reused in the Work**

Maintain structures, portions of structures, and other materials to be salvaged and reused in reconstruction work.

Assume responsibility for the material until Project Final Acceptance.

Repair or replace materials lost or stolen before reuse at the Contractor's expense.

Spread suitable surplus excavation material on the slopes of the roadway embankments.

Otherwise, dispose of the waste materials off the right-of-way at the Contractor's expense.

**C. Bridge Components**

Dispose of bridge components according to Section 540. Replace or repair at the Contractor's expense structures, portions of structures, or materials to be salvaged, retained, or used in the reconstructed work but that were carelessly damaged or destroyed by the Contractor.

**610.3 Construction Requirements****610.3.01 Personnel**

General Provisions 101 through 150.

**610.3.02 Equipment**

General Provisions 101 through 150.

**610.3.03 Preparation**

If removing a structure may endanger a new construction, finish that part of the work before beginning the new construction.

**610.3.04 Fabrication**

General Provisions 101 through 150.

**610.3.05 Construction****A. Protection of Remaining Structures**

Do not use explosives, equipment, or devices that may endanger structures, facilities, or other property to remain in place. If parts of structures are to remain in place, protect them from damage during construction. Protect and preserve the salvage value of materials to be salvaged.

**B. Extent of Removal**

Separate and remove existing structures, with their attached parts and connections, as shown on the Plans or designated to be removed.

1. When a part of an existing structure is to remain in place, ensure that the part to be removed extends to a construction joint or is cut off to the lines shown on the Plans, leaving reasonably smooth faces. Remove walls and other masonry construction to the bottoms of the foundations unless otherwise specified.
2. Remove walls and their foundations within the roadbed area to an elevation at least 3 ft (900 mm) below the top of the finished subgrade, unless otherwise specified.
3. See Subsection 201.3.05.C.1.c, "Abandoned Obstructions," for guidelines for rigid surfaces.

**C. Railway Tracks**

Removing railway tracks includes removing rails, ties, switches, towers, concrete structures, sign posts, and other related railway structures. Leave ballast in place, unless otherwise specified.

**D. Inlets, Catch Basins, Manholes, and Culverts**

1. Remove gratings, traps, and other metal castings of inlets, catch basins, and manholes without damaging them. Reuse them on new structures or salvage them, whichever the Engineer directs.
2. Remove old culverts down to the ground level or to the adjacent water level, unless otherwise shown on Plans.
3. Remove the bottom slabs of inlets, catch basins, manholes, and culverts. If the Engineer permits them to remain in place, break them up so that water will readily pass through them.

**E. Removing Pipe**

Uncover the pipe to remove it without damage. Exercise care in removing the pipe. Replace pipe sections damaged by negligence at the Contractor's expense.

After removing the pipe, clean it and neatly stack it at points directed by the Engineer along the line of the work. Unless otherwise specified, the pipe is the property of the Department.

**F. Septic Tanks**

When encountering septic tanks, completely remove the contents of each tank.

1. Remove and dispose of the tank's contents as required by the State Department of Health and local health authorities.
2. Before backfilling the remaining portion of the septic tank, drill holes in the bottom of the tank or break it up as the Engineer directs, to permit drainage.

**G. Backfilling**

Backfill trenches and other excavations dug for removing miscellaneous structures.

1. Use approved materials in the backfill.
2. Compact the backfill in layers no more than 6 in (150 mm) thick and with the proper moisture content. Use pneumatic tampers or other approved equipment.
3. Under the roadway, ensure that the degree of compaction conforms to Section 208. Elsewhere, compact the backfill equal to the soil surrounding it.

**H. Structures to Remain**

Preserve unharmed the miscellaneous structures, including fences, buildings, pipe lines, pole lines, water and sewer lines, and other improvements that owners or the Department will retain or that others will remove.

**I. Culverts to be Extended**

Where concrete culverts are to be extended, remove a minimum amount of concrete in parapets, wing walls, and wing wall footings to clear the new construction. Make the joint or connection as shown on the Plans or as directed by the Engineer.

**J. Fences**

When removing fences, do not allow livestock to escape. If fences are to be reset according to Section 611, protect the spelter coating of fence fabric, steel fence posts, and braces.

The Engineer will require that reusable posts removed be clean and free of concrete. If desired, furnish new posts instead of cleaning the old ones at no additional cost to the Department.

**K. Raised Edge Curb**

Remove raised edge curb to a reasonably true line at the elevation of normal finished pavement.

If the average of the plus and minus deviations approximate the original normal edge of pavement, a tolerance of approximately 1 in (25 mm) above or below this elevation will be accepted.

Do not shatter pavement that will be retained.

**L. Highway Signs**



Remove the entire sign from the supports, and remove the supports from the concrete foundation.

#### **M. Lighting Standards and Appurtenances**

Disassemble the lighting standard, and separate each component part including the transformer base. Cut the underground duct before removing these items.

##### **610.3.06 Quality Acceptance**

General Provisions 101 through 150.

##### **610.3.07 Contractor Warranty and Maintenance**

General Provisions 101 through 150.

#### **610.4 Measurement**

Removing miscellaneous roadway items is measured to determine the Unit or Units of each type specified in the Proposal and on the Plans. Only when listed as a Pay Item in the Contract will a removed item be measured for separate payment.

##### **610.4.01 Limits**

General Provisions 101 through 150.

#### **610.5 Payment**

Removing miscellaneous roadway items will be paid for at the Contract Unit Price. Payment is full compensation for removing and disposing of the structures according to these Specifications.

Payment will be made under:

<b>Item No. 610</b>	<b>Removal of Existing Runway Lighting, complete, incl. wiring (existing base cans and conduit to remain)</b>	<b>Per Lump Sum</b>
Item No. 610	Removal of Existing Runway Signs, complete, incl. wiring (existing concrete foundations to remain)	Per Lump Sum
Item No. 610	Removal of Existing 4-Box PAPI, including wiring	Per Each
Item No. 610	Removal of Existing Taxiway Lighting, complete, incl. wiring (existing base cans and conduit to remain)	Per Lump Sum
Item No. 610	Removal of Existing Taxiway Signs, complete, incl. wiring (existing concrete foundations to remain)	Per Lump Sum
Item No. 610	Removal of Existing Runway Lighting base can and concrete apron, complete	Per Each
Item No. 610	Removal of Existing Runway Sign concrete foundation, complete	Per Each
Item No. 610	Removal of Existing Taxiway Lighting base can and concrete apron, complete	Per Each

**610.5.01 Adjustments**

General Provisions 101 through 150.

**END OF SECTION 610**

## **Section 680 – Highway Lighting**

### **680.1 General Description**

This work includes furnishing and installing roadway lighting standards and luminaires for roadway lighting systems according to the specifications and plans.

#### **680.1.01 Definitions**

Refer to Section 682 for definitions.

#### **680.1.02 Related Referenced**

##### **A. Standard Specifications**

Section 205—Roadway Excavation  
Section 500—Concrete Structures  
Section 682—Electrical Wire, Cable, and Conduit  
Section 683—High Level Lighting Systems  
Section 800—Coarse Aggregate  
Section 801—Fine Aggregate  
Section 832—Curing Agents  
Section 853—Reinforcement and Tensioning Steel  
Section 854—Castings and Forgings  
Section 870—Paint  
Section 920—Lighting Standards and Towers  
Section 922—Electrical Wire and Cable  
Section 923—Electrical Conduit  
Section 934—Miscellaneous Electrical Materials  
Section 937—Luminaires, LED

##### **B. Related Documents**

GDT 7  
GDT 59  
GDT 67

FHWA 23 USC 313 Buy America Act

NECA 505-10 Standard for Installing and Maintaining High Mast, Roadway and Area Lighting

AASHTO 2015 LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, with interims.

### **680.1.03 Submittals**

#### **A. Purchase List**

Before purchasing materials, electronically submit the complete materials and structures list, including Shop Drawings, to the Engineer for approval. Include the manufacturer's name, catalog number(s), and other descriptive data needed to clearly define each item.

#### **B. Manufacturer's Certifications**

##### **1. Certification of Construction Items**

Secure supplier or manufacturer certifications, including mill certificates, guaranteeing the construction items were manufactured according to the specifications.

Ensure that the certificate show that representative samples were tested, and test results conform to the specifications.

Shall be in accordance with FHWA 23 USBC 313 Buy America Act.

##### **2. Certification of Quantity**

Attach a copy of the bill of lading, sales order, or list showing the quantity of materials furnished for a specific project. Make this part of the certification by reference.

#### **C. Manufacturer's Guarantees**

After the work is complete and accepted, obtain manufacturer's guarantees for the mechanical and electrical equipment used.

Give these to the Engineer who will pass them to the agency responsible for continued equipment maintenance.

### **680.2 Materials**

Furnish only new materials for this work. Ensure that materials meet the following requirements unless other indicated:

<b>Material</b>	<b>Section</b>
Portland Cement Concrete, Class A	500
Coarse Aggregate	800
Fine Aggregate	801
Cement Concrete Curing Materials	832

Bar Reinforcement for Concrete Structures	853.2.01
Gray Iron Castings	854.2.01
Paints (Field Painting)	870
Lighting Standards and Towers	920
Electric Wire and Cable	922
Electric Conduit	923
Miscellaneous Electrical Materials	924
Luminaires, LED	927

#### A. Codes and Standards

Ensure that all materials and work performed meet the latest revisions of the following standards, codes and regulations:

- The American Association of State Highway Transportation Officials (AASHTO)
- Federal Highway Administration (FHWA)
- National Electrical Code (NEC)
- National Electrical Safety Code (NESC)
- Illuminating Engineering Society (IES)
- Insulated Cable Engineers Association (ICEA)
- American National Standards Institute (ANSI)
- Occupational Safety and Health Administration (OSHA)
- Nationally Recognized Testing Laboratories (NRTL)
- Power company regulations and standards
- Codes, regulations, and rules in the work area or municipality

In addition to the above, ensure that electrical materials meet the following standards, provided a standard exists for that material:

- American Society for Testing and Materials (ASTM)
- Underwriter's Laboratories, Inc. (UL)
- Institute of Electrical and Electronics Engineers (IEEE)
- National Electrical Manufacturer's Association (NEMA)
- National Electrical Contractors Association (NECA)
- National Electrical Testing Association (NETA)

The Contractor shall furnish a letter to the engineer certifying that all electrical materials used for the project comply with the plans and have been listed by an OSHA approved NRTL to the appropriate UL Standard and bear the Mark of the NRTL. If any materials used in the project are found to be deficient, the Contractor will replace them at their own expense at no cost to the Department.

**680.2.01 Delivery, Storage, and Handling**

Contractor to ensure materials are delivered to project site undamaged and stored properly while outside off the ground. Any damage due to shipment, storage, installation prior to acceptance will be replaced by the Contractor at no additional cost.

Dispose of excess or unsuitable material according to Section 205.

**680.3 Construction Requirements****680.3.01 Personnel**

Refer to Section 682.3.01.

**680.3.02 Material**

Ensure that material is at the project site and approved before construction begins.

**680.3.03 Preparation**

Before beginning work, pay applicable fees and obtain needed permits from power companies or governmental agencies.

**680.3.04 Fabrication**

General Provisions 101 through 150.

**680.3.05 Construction****A. Installing Conduit**

Conduit shall be installed as directed in Section 682.6.01 A-I.

**B. Constructing Pull and Junction Boxes**

Pull and junction boxes shall be installed as directed in Section 682.6.01 I.

**C. Installing Underground Cable for Lighting Circuits**

Cable shall be installed as directed in Section 682.6.01 L-N.

**D. Installing Light Standard and Towers**

Grounding of all circuitry shall be installed as directed in Section 682.6.01 P.

Install the specified design, kind, and size of light standards or towers at plan-specified locations. Install these structures, complete with specified supporting assembly and luminaires, to the mounting heights shown on the plans.

Consider transformer bases and breakaway devises to be an integral part of the lighting standard unless otherwise specified.

Install light standards and towers as follows:

1. Installing Foundations

a. Foundations for Bolt-Down Base Standards with Anchor or Transformer Bases Install these as follows:

- 1) Excavate a hole the size and depth shown on the plans.  
Remove and dispose of excavated material as directed by the Engineer.
- 2) Place the specified type and size anchor bolts according to the pole manufacturer's recommendations. Hold these securely by a template to ensure proper position in the completed foundation.

**NOTE: Never attempt to realign the anchor bolts after pouring the foundation.**

- 3) Place conduits in foundations, orient them to accommodate branch circuit cables, and securely hold them to avoid displacement.
  - 4) Pour Class A concrete into the excavated area to the following depths:
    - a. First pour against undisturbed earth up to 4 in. (100 mm) below the finished ground line.
    - b. Then, using an approved form, continue to pour to the finished top of the foundation elevation, as specified.
  - 5) Foundation form to remain in place at least 24 hours or until concrete cures.
  - 6) Chamfer the top and formed portions of the foundation edges.
  - 7) Give a Type III finish to all portions of the foundation above finished grade down to at least 2 in. (50 mm) below finished grade, according to Subsection 500.3.05. AB.4, *Type III—Special Surface Coating Finish*.
  - 8) When obstructions are encountered, the Contractor shall request to relocate the foundation. Any abandoned holes shall be backfilled in accordance with Subsection 207.3.5.C.
  - 9) When rock is encountered, the design foundation depth may be reduced 6 in. for every 12 in. of embedment in rock. The minimum depth of any foundation shall be determined by the Engineer.
  - 10) Where breakaway bases are required according to AASHTO Specifications for Structural Supports for Highway Signs, do not allow any portion of the base or anchor bolts to protrude more than 2 in. (50 mm) above the ground line.
  - b. Tower Foundations and Standard Foundations on Structures must be constructed according to details within the plans.
  - c. Foundations for Pre-stressed Concrete Butt Base Standards  
Excavate for pre-stressed concrete butt base lighting standard foundations either manually or mechanically. When excavating:
    - 1) Dig or drill holes to the depths and diameters shown on the plans.
    - 2) Place and compact 6 in. (150 mm) of crushed stone in the bottom of the hole. Use crushed stone according to Subsection 800.2.01, with stone size 57.
2. Installing Light Standards and Towers on Foundations  
Erect the standards or towers as recommended by the manufacturer and approved by the Engineer. Erect carefully to avoid marring the finish or damaging the standard.

Ground the lighting supports according to the plans and as directed within Section 682.6.01 P.

d. Installing Bolt-Down Base Standards with Anchor or Transformer Bases

After installing foundations according to Subsection 680.3.05.E.1, install pre-stressed concrete-butt base (direct burial) standards as follows:

- 1) When using bracket arm type, use metal shims or double nuts supplied with the poles to plumb the pole about its center axis.

- 2) When using the single arm type, unless otherwise specified, install the luminaire and hardware, then plumb the back side of the standard, providing a slight rake or lean away from the traveled way.
- 3) Handhole shall be oriented such that workers accessing the handhole shall face oncoming traffic directly or located on the back side of the pole, facing the roadway.
- e. Installing Pre-stressed Concrete Butt Base Standards  
After installing foundations according to Subsection 680.3.05.E.1, install pre-stressed concrete-butt base (direct burial) standards as follows:
  - 1) Position the pole in the center of the hole at grade and hold it in place, as follows.
    - a) Set two bracket arm lighting standards to plumb.
    - b) Rake single bracket arm lighting standards according to Subsection 680.3.05.G
  - 2) Fill the space surrounding the pole butt base as follows:
    - a) Fill with crushed stone, applied in 6 in. (150 mm) layers. Use crushed stone according to Subsection 800.2.01, with stone size 57.
    - b) Compact each layer with mechanical tamping equipment.
    - c) Moisten the stone backfill as necessary.
    - d) Fill the area to the bottom edge of the cable entrance in the butt base.
  - 3) Install the cable.
  - 4) Continue to fill and compact the area with 6 in. (150 mm) layers of crushed stone to 12 in. (300 mm) below grade.
  - 5) Backfill the remaining 12 in. (300 mm) with soil in 2 equal layers, thoroughly compacting each layer.
3. Installing Frangible or Breakaway Standards
  - a. Ensure that frangible or breakaway lighting standards meet the breakaway requirements according to plan details and AASHTO Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.
  - b. If breakaway devices are used, quick disconnect breakaway connectors must be used.
  - c. All entryway points created by the use of breakaway devices shall be permanently and completely sealed against rodent entry.
  - d. Breakaway devices are not to be used on bridge parapets, barrier walls and not required behind guardrail.
  - e. Contractor shall verify that the loading of the standard, arm(s), luminaire(s), and appurtenances does not exceed the capacity of the breakaway device.

## **E. Bridge Lighting Installations**

When installing lighting on a bridge, examine the bridge plans or the completed structure, whichever applies, to determine the proposed or existing details that affect the lighting standards. Do this before ordering the standards.

Immediately report to the Engineer discrepancies between the highway lighting plans, the existing bridge structure, or the proposed bridge plans so that these differences can be reconciled.

Handhole shall be oriented such that workers accessing the handhole shall face oncoming traffic directly unless directed by the Engineer.

## **F. Bracket Arms**



Install the specified type, design, kind, dimensions, and number of bracket arms on the lighting standards according to the plans.

Attach bracket arms to light standard in accordance with manufacturer's recommendations.

Unless otherwise indicated on the plans, all arms are to be installed perpendicular to the roadway's centerline.

## **G. Luminaires**

Mount or install the specified design and size of luminaire shown on the plans. Ensure luminaire meets requirements as set forth within Spec 927, as applicable. Level according to the manufacturer's recommendations and plan details, and as approved by the Engineer.

### **4. Position the Luminaires**

Position luminaires to illuminate the roadway as follows:

- a. Where a lighting unit illuminates a roadway portion on a grade, rotate the luminaire on its major axis to bring the minor axis parallel to the roadway.
- b. Ensure the luminaires major axes are parallel to grade within 0° to plus 3°.
- c. Provide glare shields on luminaires if required by the plans in accordance with manufacturer's recommendations.

### **5. Install Pole and Bracket Cable**

Install the pole and bracket cable per the applicable NEC requirements and as follows:

- a. Provide a strain relief for the conductors at the top of the pole or at the end of the arm where the luminaire is attached suitable to support their weight and any motion due to pole vibration.
- b. Clamp cables into the proper terminals on the luminaire's terminal board.
- c. Splice cables to the proper phase and neutral conductors outside the handhole in the pole base.
- d. Ensure that cables contain specified size and type in-the-line fuses and waterproof holders within each phase conductor.
- e. Leave enough slack in cables to check or replace the fuse outside of the handhole.
- f. Leave slack in cables for future maintenance.

Finish the Installation

- a. Measure sure that all spliced connections are watertight, properly dress all wiring, and make sure that all cable insulation is not damaged.
- b. After making the required circuit splices outside the handhole, place wires inside the handhole.
- c. Properly secure the handhole cover, covering the hand hole completely.
- d. Attach a suitable identification tag to each phase cable, using white for the neutral grounding wire.
- e. Clean the light control surfaces and glassware or light transmitting surfaces after installation. Clean according to the luminaire manufacturer's recommendations.

## **H. Electrical Service Equipment**

Service point equipment shall be provided and installed in accordance with Section 682.6.01 O

## **I. Field Painting**

After erecting non-galvanized steel standards, thoroughly clean and touch up the standards, as required, with 1B Orange or original type primer.

Apply remaining coats according to System V (Heavy Exposure) in Section 535, unless otherwise indicated on the plans.

**J. Seed and Sod Repair**

If areas previously seeded or sodded are disturbed during this work, restore final grade, sprig, reseed (with mulch), or re-sod those areas according to Section 700.

**K. Final Cleanup**

Perform final clean-up according to Subsection 104.07 as it applies. Before final inspection, touch up finishes, clean surfaces to the satisfaction of the Engineer.

**680.3.06 Quality Acceptance**

**A. Field Painting**

If the finish on galvanized steel material is scratched, chipped, or otherwise damaged, the material will be rejected. Repair the finish only with the Engineer's approval, according to Section 645.

**B. Testing**

Testing shall be completed and comply with Section 682.7.

**C. Final Acceptance**

Final Acceptance of the lighting system will be contingent on a 30-day testing period of continuous nightly automatic operation or until all other items have been accepted, whichever occur later. The Contractor is responsible for energy costs until acceptance from the Department.

1. Test and Acceptance Time
2. Begin the test period after completion of the lighting work Correction of Defects

Correct defects in material or workmanship at no expense to the Department if they occur before maintenance acceptance or Final Acceptance.

If defects are identified during the 30-day test, correct the defects, then continue the test for another 30 days. Run the test each time a defect is identified and corrected until achieving uninterrupted, continuous nightly automatic operation for 30 days.

3. Final Voltage Test

After the testing period and at Final Acceptance, provide an electrician, a voltmeter, and an ammeter to perform this test as in Subsection 680.3.06.B.2, above. Perform the test in the presence of the Department's Inspector(s) for each lighting circuit. Make this test data part of project records.

**680.3.07 Contractor Warranty and Maintenance**

General Provisions 101 through 150.

**680.4 Measurement**

Highway lighting Items complete in place and accepted are measured as follows:

**A. Lighting Standards and Towers**

Each lighting standard, with or without a base, or each lighting tower of the specified kind, design, and mounting height (M.H.) is measured by the unit, complete in place.

Appurtenances for lighting standards and towers are measured as follows:

1. Lowering device power supply units are to be integral to the cost of the tower and shall not be measured for payment separately unless shown on the plans as a separate payment item.
2. Foundations for lighting standards are not measured separately for payment and considered incidental to the cost of the lighting standard.
3. Foundations for towers are measured separately, per each tower foundation
4. Each tower foundation shall consist of Class A concrete and reinforcement steel as indicated on the plans or Detail Drawing.

**B. Bracket Arm**

Luminaire bracket arm are to be of the specified length and type and measure per each.

**C. Luminaires**

Luminaires of the specified size, type, and design are measured per each.

**680.4.01 Limits**

General Provisions 101 through 150.

**680.5 Payment**

Payment for highway lighting will be made as follows:

**A. Lighting Standards and Towers**

Each light standard or lighting tower will be paid for at the Contract Unit Price per each.

Payment is full compensation for furnishing and installing the complete lighting standard or tower, including the bracket arm(s) or high mast luminaire support and lowering assembly, and associated hardware and connections furnishing grounding material; installing the foundation; furnishing backfill materials; backfilling; reshaping to proper contours; and repairing seeded or sodded areas.

**1. Luminaires**

Luminaires will be paid for the Contract Unit Price per each. Payment is full compensation for furnishing and installing the complete luminaire. Installation includes ballast(s) or LED drivers, lamp(s) or LED modules, surge protection devices (SPD), glare shields where required, and associated hardware and wiring.

2. Seed and Sod Repair

Include the costs incurred in reseeding, re-sodding, and otherwise restoring the areas to their original condition in the Contract Price for other Items. These will not be paid for separately.

3. Energy Cost During Testing

The Contractor is responsible for the energy cost of each circuit or part of a circuit during the test period. The cost of energy consumed after the successful completion of the 30-day test period will be borne by others.

Payment items related to this section are described in the following section:

N/A

**680.5.01 Adjustments**

General Provisions 101 through 150.

**END OF SECTION 680**

**END OF SECTION 680**

## DIVISION 9 - FAA – General Construction Items

### Item C-102 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control

#### DESCRIPTION

**102-1.** This item shall consist of temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

Temporary erosion control shall be in accordance with the approved erosion control plan; the approved Construction Safety and Phasing Plan (CSPP) and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

#### MATERIALS

**102-2.1 Grass.** Grass that will not compete with the grasses sown later for permanent cover per Item T-901 shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant.

**102-2.2 Mulches.** Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials per Item T-908. Mulches shall not create a wildlife attractant.

**102-2.3 Fertilizer.** Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

**102-2.4 Slope drains.** Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

**102-2.5 Silt fence.** Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

**102-2.6 Other.** All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

## CONSTRUCTION REQUIREMENTS

**102-3.1 General.** In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The RPR shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

**102-3.2 Schedule.** Prior to the start of construction, the Contractor shall submit schedules in accordance with the approved Construction Safety and Phasing Plan (CSPP) and the plans for accomplishment of temporary and permanent erosion control work for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

**102-3.3 Construction details.** The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the plans and approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

**102-3.4 Installation, maintenance and removal of silt fence.** Silt fences shall extend a minimum of 16 inches (41 cm) and a maximum of 34 inches (86 cm) above the ground surface. Posts shall be set no more than 10 feet (3 m) on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch (300-mm) overlap and securely sealed. A trench shall be excavated approximately 4 inches (100 mm) deep by 4 inches (100 mm) wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

#### **METHOD OF MEASUREMENT**

**102-4.1** Temporary erosion and pollution control work shall be paid for in the unit price for which the item is installed. No separate payment will be made for the erosion control measures used.

**102-4.2** Control work performed for protection of construction areas outside the construction limits, such as borrow and waste areas, haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor.

#### **BASIS OF PAYMENT**

**102-5.1** This work shall be paid for in the unit price for which the item is installed. No separate payment will be made for the erosion control measures used.

Where other directed work falls within the specifications for a work item that has a contract price, the units of work shall be measured and paid for at the contract unit price bid for the various items.

Temporary control features not covered by contract items that are ordered by the RPR will be paid for in accordance with Section 90, paragraph 90-05 *Payment for Extra Work*.

#### **REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33      *Hazardous Wildlife Attractants on or Near Airports*

AC 150/5370-2      *Operational Safety on Airports During Construction*

ASTM International (ASTM)

ASTM D6461      *Standard Specification for Silt Fence Materials*

United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

**END OF ITEM C-102**



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### 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 ] percent 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 Sponsor.

**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:

- a. With first pay request, 25%.
- b. When 25% or more of the original contract is earned, an additional 25%.
- c. When 50% or more of the original contract is earned, an additional 40%.
- d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by 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

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

**END OF ITEM C-105**

## DIVISION 16 - FAA – Miscellaneous

### Item P-606 Adhesive Compounds, Two-Component for Sealing Wire and Lights in Pavement

#### DESCRIPTION

**606-1.1** This specification covers two types of material; a liquid suitable for sealing electrical wire in saw cuts in pavement and for sealing light fixtures or bases in pavement, and a paste suitable for embedding light fixtures in the pavement. Both types of material are two-component filled formulas with the characteristics specified in paragraph 606-2.4. Materials supplied for use with asphalt and/or concrete pavements must be formulated so they are compatible with the asphalt and/or concrete.

#### MATERIALS

**606-2.1 Curing.** When pre-warmed to 77°F (25°C), mixed, and placed in accordance with manufacturer's directions, the materials shall cure at temperatures of 45°F (7°C) or above without the application of external heat.

**606-2.2 Storage.** The adhesive components shall not be stored at temperatures over 86°F (30°C), unless otherwise specified by the manufacturer.

**606-2.3 Caution.** Installation and use shall be in accordance with the manufacturer's recommended procedures. Avoid prolonged or repeated contact with skin. In case of contact, wash with soap and flush with water. If taken internally, call doctor. Keep away from heat or flame. Avoid vapor. Use in well-ventilated areas. Keep in cool place. Keep away from children.

**606-2.4 Characteristics.** When mixed and cured in accordance with the manufacturer's directions, the materials shall have the following properties shown in Table 1.

**Table 1. Property Requirements**

Physical or Electrical Property	Minimum	Maximum	ASTM Method
Tensile			
Portland cement concrete	1,000 psi (70 kg/sq cm)		D 638
Asphalt concrete	500 psi (35 kg/sq cm)		
Elongation			
Portland cement concrete		See note <sup>1</sup>	D 638
Asphalt concrete	50%		D 638
Coef. of cub. exp. cu. cm/cu. cm/°C	0.00090	0.00120	D 1168
Coef. of lin. exp. cm/cm/°C	0.000030	0.000040	D 1168
Dielectric strength, short time test	350 volts/mil.		D 149
Arc resistance	125 sec		
Pull-off			
Adhesion to steel	1,000 psi (70 kg/sq cm)		
Adhesion to Portland cement concrete	200 psi (14 kg/sq cm)		
Adhesion to asphalt concrete	No test available.		
Adhesion to aluminum	250 psi		

<sup>1</sup> 20% or more (without filler) for formulations to be supplied for areas subject to freezing.

### **SAMPLING, INSPECTION, AND TEST PROCEDURES**

**606-3.1 Tensile properties.** Tests for tensile strength and elongation shall be conducted in accordance with ASTM D638.

**606-3.2 Expansion.** Tests for coefficients of linear and cubical expansion shall be conducted in accordance with, Method B, except that mercury shall be used instead of glycerine. The test specimen shall be mixed in the proportions specified by the manufacturer, and cured in a glass tub approximately 2 inch (50 mm) long by 3/8 inch (9 mm) in diameter. The interior of the tube shall be precoated with a silicone mold release agent. The hardened sample shall be removed from the tube and aged at room temperature for one (1) week before conducting the test. The test temperature range shall be from 35°F (2°C) to 140°F (60°C).

**606-3.3 Test for dielectric strength.** Test for dielectric strength shall be conducted in accordance with ASTM D149 for sealing compounds to be furnished for sealing electrical wires in pavement.

**606-3.4 Test for arc resistance.** Test for arc resistance shall be conducted for sealing compounds to be furnished for sealing electrical wires in pavement.

**606-3.5 Test for adhesion to steel.** The ends of two smooth, clean, steel specimens of convenient size (1 inch by 1 inch by 6 inch) (25 mm by 25 mm by 150 mm) would be satisfactory when bonded together

with adhesive mixture and allowed to cure at room temperature for a period of time to meet formulation requirements and then tested to failure on a Riehle (or similar) tensile tester. The thickness of adhesive to be tested shall be 1/4 inch (6 mm).

### 606-3.6 Adhesion to Portland cement concrete

**a. Concrete test block preparation.** The aggregate grading shall be as shown in Table 2.

The coarse aggregate shall consist of crushed rock having a minimum of 75% of the particles with at least one fractured face and having a water absorption of not more than 1.5%. The fine aggregate shall consist of crushed sand manufactured from the same parent rock as the coarse aggregate. The concrete shall have a water-cement ratio of 5.5 gallons (21 liters) of water per bag of cement, a cement factor of 6,  $\pm 0.5$ , bags of cement per cubic yard (0.76 cubic meter) of concrete, and a slump of 2-1/2 inch (60 mm),  $\pm 1/2$  inch (60 mm  $\pm 12$  mm). The ratio of fine aggregate to total aggregate shall be approximately 40% by solid volume. The air content shall be 5.0%,  $\pm 0.5\%$ , and it shall be obtained by the addition to the batch of an air-entraining admixture such as Vinsol® resin. The mold shall be of metal and shall be provided with a metal base plate.

Means shall be provided for securing the base plate to the mold. The assembled mold and base plate shall be watertight and shall be oiled with mineral oil before use. The inside measurement of the mold shall be such that several one inch (25 mm) by 2-inch (75 mm) by 3-inch (25 mm by 50 mm by 75 mm) test blocks can be cut from the specimen with a concrete saw having a diamond blade. The concrete shall be prepared and cured in accordance with ASTM C192.

**Table 2. Aggregate for Bond Test Blocks**

Type	Sieve Size	Percent Passing
<b>Coarse Aggregate</b>	3/4 inch (19.0 mm)	97 to 100
	1/2 inch (12.5 mm)	63 to 69
	3/8 inch (9.5 mm)	30 to 36
	No. 4 (4.75 mm)	0 to 3
<b>Fine Aggregate</b>	No. 4 (4.75 mm)	100
	No. 8 (2.36 mm)	82 to 88
	No. 16 (1.18 mm)	60 to 70
	No. 30 (600 $\mu$ m)	40 to 50
	No. 50 (300 $\mu$ m)	16 to 26
	No. 100 (150 $\mu$ m)	5 to 9

**b. Bond test.** Prior to use, oven-dry the test blocks to constant weight at a temperature of 220°F to 230°F (104°C to 110°C), cool to room temperature, 73.4°F  $\pm 3^\circ$ F (23°C  $\pm 1.6^\circ$ C), in a desiccator, and clean the surface of the blocks of film or powder by vigorous brushing with a stiff-bristled fiber brush. Two test blocks shall be bonded together on the one inch by 3 inch (25 mm by 75 mm) sawed face with the adhesive mixture and allowed to cure at room temperature for a period of time to meet formulation requirements and then tested to failure in a Riehle (or similar) tensile tester. The thickness of the adhesive to be tested shall be 1/4 inch (6 mm).

**606-3.7 Compatibility with asphalt mix.** Test for compatibility with asphalt in accordance with ASTM D5329.

**606-3.8 Adhesive compounds - Contractor's responsibility.** The Contractor shall furnish the vendor's certified test reports for each batch of material delivered to the project. The report shall certify that the

material meets specification requirements and is suitable for use with concrete pavements. The report shall be provided to and accepted by the Resident Project Representative (RPR) before use of the material. In addition, the Contractor shall obtain a statement from the supplier or manufacturer that guarantees the material for one year. The supplier or manufacturer shall furnish evidence that the material has performed satisfactorily on other projects.

**606-3.9 Application.** Adhesive shall be applied on a dry, clean surface, free of grease, dust, and other loose particles. The method of mixing and application shall be in strict accordance with the manufacturer's recommendations. When used with Item P-605, such as light can installation, Item P-605 shall not be applied until the Item P-606 has fully cured.

#### **METHOD OF MEASUREMENT**

**606-4.1** The adhesive compound shall be measured by the gallon of adhesive as specified, in place, complete and accepted. When required in the installation of an in-runway lighting system or portion thereof, no measurement will be made for direct payment of adhesive, as the cost of furnishing and installing shall be considered as a subsidiary obligation in the completion of the installation.

#### **BASIS OF PAYMENT**

**606-5.1** Payment shall be made, where applicable, at the contract unit price per gallon for the adhesive. This price shall be full compensation for furnishing all materials, and for all preparation, delivering, and application of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Item P-606-5.1 Adhesive Compound - per gallon

#### **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 C192	Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
ASTM D149	Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
ASTM D638	Standard Test Method for Tensile Properties of Plastics
ASTM D5329	Standard Test Methods for Sealants and Fillers, Hot-applied, for Joints and Cracks in Asphaltic and Portland Cement Concrete Pavements

#### **END OF ITEM P-606**

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## Item P-610 Concrete for Miscellaneous Structures

### DESCRIPTION

**610-1.1** This item shall consist of concrete and reinforcement, as shown on the plans, prepared and constructed in accordance with these specifications. This specification shall be used for all concrete other than airfield pavement which are cast-in-place.

### MATERIALS

**610-2.1 General.** Only approved materials, conforming to the requirements of these specifications, shall be used in the work. Materials may be subject to inspection and tests at any time during their preparation or use. The source of all materials shall be approved by the Resident Project Representative (RPR) before delivery or use in the work. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to ensure preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed in them.

The use of pit-run aggregates shall not be permitted unless the pit-run aggregate has been screened and washed, and all fine and coarse aggregates stored separately and kept clean. The mixing of different aggregates from different sources in one storage stockpile or alternating batches of different aggregates shall not be permitted.

**a. Reactivity.** Fine aggregate and coarse aggregates to be used in all concrete shall have been tested separately within six months of the project in accordance with ASTM C1260. Test results shall be submitted to the RPR. The aggregate shall be considered innocuous if the expansion of test specimens, tested in accordance with ASTM C1260, does not exceed 0.08% at 14 days (16 days from casting). If the expansion either or both test specimen is greater than 0.08% at 14 days, but less than 0.20%, a minimum of 25% of Type F fly ash, or between 40% and 55% of slag cement shall be used in the concrete mix.

If the expansion is greater than 0.20%, the aggregates shall not be used, and test results for other aggregates must be submitted for evaluation; or aggregates that meet P-501 reactivity test requirements may be utilized.

**610-2.2 Coarse aggregate.** The coarse aggregate for concrete shall meet the requirements of ASTM C33 and the requirements of Table 4, Class Designation 5S; and the grading requirements shown below, as required for the project.

**Coarse Aggregate Grading Requirements**

<b>Maximum Aggregate Size</b>	<b>ASTM C33, Table 3 Grading Requirements (Size No.)</b>
1 1/2 inch (37.5 mm)	467 or 4 and 67
1 inch (25 mm)	57
¾ inch (19 mm)	67
½ inch (12.5 mm)	7

**610-2.2.1 Coarse Aggregate susceptibility to durability (D) cracking.** [ Not used. ]

Coarse aggregate may only be accepted from sources that have a 20-year service history for the same gradation to be supplied with no history of D-Cracking. Aggregates that do not have a 20-year record of service free from major repairs (less than 5% of slabs replaced) in similar conditions without D-cracking shall not be used unless the material currently being produced has a durability factor greater than or equal to 95 per ASTM C666. The Contractor shall submit a current certification and test results to verify the aggregate acceptability. Test results will only be accepted from a State Department of Transportation (DOT) materials laboratory or an accredited laboratory. Certification and test results which are not dated or which are over one (1) year old or which are for different gradations will not be accepted.

Crushed granite, calcite cemented sandstone, quartzite, basalt, diabase, rhyolite or trap rock are considered to meet the D-cracking test requirements but must meet all other quality tests specified in Item P-501.

**610-2.3 Fine aggregate.** The fine aggregate for concrete shall meet all fine aggregate requirements of ASTM C33.

**610-2.4 Cement.** Cement shall conform to the requirements of **ASTM C150 - Type I**

**610-2.5 Cementitious materials.**

**a. Fly ash.** Fly ash shall meet the requirements of ASTM C618, with the exception of loss of ignition, where the maximum shall be less than 6%. Fly ash shall have a Calcium Oxide (CaO) content of less than [ 15% ] and a total available alkali content less than 3% per ASTM C311. Fly ash produced in furnace operations using liming materials or soda ash (sodium carbonate) as an additive shall not be acceptable. The Contractor shall furnish the previous three most recent, consecutive ASTM C618 reports for each source of fly ash proposed in the concrete mix, and shall furnish each additional report as they become available during the project. The reports can be used for acceptance or the material may be tested independently by the RPR.

**b. Slag cement (ground granulated blast furnace (GGBF)).** Slag cement shall conform to ASTM C989, Grade 100 or Grade 120. Slag cement shall be used only at a rate between 25% and 55% of the total cementitious material by mass.

**610-2.6 Water.** Water used in mixing or curing shall be from potable water sources. Other sources shall be tested in accordance with ASTM C1602 prior to use.

**610-2.7 Admixtures.** The Contractor shall submit certificates indicating that the material to be furnished meets all of the requirements indicated below. In addition, the RPR may require the Contractor to

submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications. Subsequent tests may be made of samples taken by the RPR from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

**a. Air-entraining admixtures.** Air-entraining admixtures shall meet the requirements of ASTM C260 and shall consistently entrain the air content in the specified ranges under field conditions. The air-entrainment agent and any water reducer admixture shall be compatible.

**b. Water-reducing admixtures.** Water-reducing admixture shall meet the requirements of ASTM C494, Type A, B, or D. ASTM C494, Type F and G high range water reducing admixtures and ASTM C1017 flowable admixtures shall not be used.

**c. Other chemical admixtures.** The use of set retarding, and set-accelerating admixtures shall be approved by the RPR. Retarding shall meet the requirements of ASTM C494, Type A, B, or D and set-accelerating shall meet the requirements of ASTM C494, Type C. Calcium chloride and admixtures containing calcium chloride shall not be used.

**610-2.8 Premolded joint material.** Premolded joint material for expansion joints shall meet the requirements of ASTM.

**610-2.9 Joint filler.** The filler for joints shall meet the requirements of Item P-605, unless otherwise specified.

#### **610-2.10 Steel reinforcement.**

**Steel Reinforcement**

<b>Reinforcing Steel</b>	<b>ASTM A615, ASTM A706, ASTM A775, ASTM A934</b>
<b>Welded Steel Wire Fabric</b>	<b>ASTM A1064, ASTM A884</b>
<b>Welded Deformed Steel Fabric</b>	<b>ASTM A1064</b>
<b>Bar Mats</b>	<b>ASTM A184 or ASTM A704</b>

**610-2.11 Materials for curing concrete.** Curing materials shall conform to **ASTM C171**.

### **CONSTRUCTION METHODS**

**610-3.1 General.** The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified here. All machinery and equipment used by the Contractor on the work, shall be of sufficient size to meet the requirements of the work. All work shall be subject to the inspection and approval of the RPR.

**610-3.2 Concrete Mixture.** The concrete shall develop a compressive strength of [ 4000 ] psi in 28 days as determined by test cylinders made in accordance with ASTM C31 and tested in accordance with ASTM C39. The concrete shall contain not less than 470 pounds of cementitious material per cubic yard (280 kg per cubic meter). The water cementitious ratio shall not exceed 0.45 by weight. The air content of the concrete shall be 5% +/- 1.2% as determined by ASTM C231 and shall have a slump of not more than 4 inches (100 mm) as determined by ASTM C143.

**610-3.3 Mixing.** Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C94 or ASTM C685.

The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F (4°C) without the RPRs approval. If approval is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F (10°C) nor more than 100°F (38°C). The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his expense.

Retempering of concrete by adding water or any other material is not permitted.

The rate of delivery of concrete to the job shall be sufficient to allow uninterrupted placement of the concrete.

**610-3.4 Forms.** Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the RPR. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as shown on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes. The Contractor shall be responsible for their adequacy.

The internal form ties shall be arranged so no metal will show in the concrete surface or discolor the surface when exposed to weathering when the forms are removed. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied immediately before the concrete is placed. Forms shall be constructed so they can be removed without injuring the concrete or concrete surface.

**610-3.5 Placing reinforcement.** All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concrete placement. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

**610-3.6 Embedded items.** Before placing concrete, all embedded items shall be firmly and securely fastened in place as indicated. All embedded items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The concrete shall be spaded and consolidated around and against embedded items. The embedding of wood shall not be allowed.

**610-3.7 Concrete Consistency.** The Contractor shall monitor the consistency of the concrete delivered to the project site; collect each batch ticket; check temperature; and perform slump tests on each truck at the project site in accordance with ASTM C143.

**610-3.8 Placing concrete.** All concrete shall be placed during daylight hours, unless otherwise approved. The concrete shall not be placed until the depth and condition of foundations, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved by the RPR. Concrete shall be placed as soon as practical after mixing, but in no case later than one (1) hour after water has been added to the mix. The method and manner of placing shall avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. The concrete shall not be dropped from a height of more than 5 feet (1.5 m). Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. Do not subject concrete to procedures which cause segregation. Concrete shall be placed on clean, damp surfaces, free from running water, or on a properly consolidated soil foundation.

**610-3.9 Vibration.** Vibration shall follow the guidelines in American Concrete Institute (ACI) Committee 309R, Guide for Consolidation of Concrete.

**610-3.10 Joints.** Joints shall be constructed as indicated on the plans.

**610-3.11 Finishing.** All exposed concrete surfaces shall be true, smooth, and free from open or rough areas, depressions, or projections. All concrete horizontal plane surfaces shall be brought flush to the proper elevation with the finished top surface struck-off with a straightedge and floated.

**610-3.12 Curing and protection.** All concrete shall be properly cured in accordance with the recommendations in American Concrete Institute (ACI) 308R, Guide to External Curing of Concrete. The concrete shall be protected from damage until project acceptance.

**610-3.13 Cold weather placing.** When concrete is placed at temperatures below 40°F (4°C), follow the cold weather concreting recommendations found in ACI 306R, Cold Weather Concreting.

**610-3.14 Hot weather placing.** When concrete is placed in hot weather greater than 85°F (30 °C), follow the hot weather concreting recommendations found in ACI 305R, Hot Weather Concreting.

### QUALITY ASSURANCE (QA)

**610-4.1 Quality Assurance sampling and testing.** Concrete for each day's placement will be accepted on the basis of the compressive strength specified in paragraph 610-3.2. The RPR will sample the concrete in accordance with ASTM C172; test the slump in accordance with ASTM C143; [ ] test air content in accordance with ASTM C231; [ ] make and cure compressive strength specimens in accordance with ASTM C31; and test in accordance with ASTM C39. The QA testing agency will meet the requirements of ASTM C1077.

The Contractor shall provide adequate facilities for the initial curing of cylinders.

**610-4.2 Defective work.** Any defective work that cannot be satisfactorily repaired as determined by the RPR, shall be removed and replaced at the Contractor's expense. Defective work includes, but is not limited to, uneven dimensions, honeycombing and other voids on the surface or edges of the concrete.

### METHOD OF MEASUREMENT

**610-5.1** Concrete shall be measured by the number of square yards based on the dimensions shown on the plans of concrete complete in place and accepted.

### BASIS OF PAYMENT

**610-6.1** Concrete shall be considered incidental, and no separate payment shall be made.

This price shall be full compensation for furnishing all materials including reinforcement and embedded items and for all preparation, delivery, installation, and curing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-610-6.1 Concrete, incidental to other work items

### 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 A184	Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A704	Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement
ASTM A706	Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A775	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A884	Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement
ASTM A934	Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
ASTM A1064	Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C33	Standard Specification for Concrete Aggregates
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C94	Standard Specification for Ready-Mixed Concrete
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C114	Standard Test Methods for Chemical Analysis of Hydraulic Cement
ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM C171	Standard Specification for Sheet Materials for Curing Concrete
ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C260	Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C311	Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete
ASTM C494	Standard Specification for Chemical Admixtures for Concrete

ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C666	Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
ASTM C685	Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C989	Standard Specification for Slag Cement for Use in Concrete and Mortars
ASTM C1017	Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1157	Standard Performance Specification for Hydraulic Cement
ASTM C1260	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1365	Standard Test Method for Determination of the Proportion of Phases in Portland Cement and Portland-Cement Clinker Using X-Ray Powder Diffraction Analysis
ASTM C1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D1751	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types)
ASTM D1752	Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

American Concrete Institute (ACI)

ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 308R	Guide to External Curing of Concrete
ACI 309R	Guide for Consolidation of Concrete

**END OF ITEM P-610**

## **DIVISION 19 - FAA – Turfing**

### **Item T-901 Seeding**

#### **DESCRIPTION**

**901-1.1** This item shall consist of soil preparation, fertilizing, liming, and seeding per the Special Provision all areas shown on the plans or as directed by the RPR in accordance with these specifications.

#### **MATERIALS**

**901-2.1 Seed.** The species and application rates of grass, legume, and cover-crop seed furnished shall be those stipulated herein. Seed shall conform to the requirements of Federal Specification JJJ-S-181, Federal Specification, Seeds, Agricultural.

Seed shall be furnished separately or in mixtures in standard containers labeled in conformance with the Agricultural Marketing Service (AMS) Seed Act and applicable state seed laws with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the RPR duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within six (6) months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed, and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in case of a mixture, the proportions of each kind of seed. Wet, moldy, or otherwise damaged seed will be rejected.

Seeds shall be applied as follows:



**NON-NATIVE GRASS SEEDING TABLE 1**

(Temporary and Permanent Seed Types for Shoulders, Medians and Slopes 3:1 or Flatter)

Common Name	Botanical Name	Class/Type	Rate/Acre	Planting Zone	Planting Dates
Common Bermuda Grass (Hulled)	<i>Cynodon dactylon</i>	Required Permanent Grass	10 (11)	1	April 16 – August 31
Common Bermuda Grass (Unhulled)			10 (11)		
Common Bermuda Grass (Hulled)	<i>Cynodon dactylon</i>	Required Permanent Grass	10 (11)	2,3,4	April 1 – October 15
Common Bermuda Grass (Unhulled)			10 (11)		
Bahia Grass	<i>Paspalum notatum</i>		10 (11)		
Rye Grass, Millet, Cereal Grass (Oats)	<i>Lolium penne spsp. Multiflorum, Echinochloa crusgalli, Avena sativa</i>	Temporary Grass	50 (56)	1	September 1- April 15
Rye Grass, Millet, Cereal Grass (Oats)	<i>Lolium penne spsp. Multiflorum, Echinochloa crusgalli, Avena sativa</i>	Temporary Grass	50 (56)	2,3,4	October 16- March 31

**NON-NATIVE GRASS SEEDING TABLE 2**

(Temporary and Permanent Seed Types for back slopes, fill slopes and areas which will not be subject to frequent mowing, slopes steeper than 3:1)

Common Name	Botanical Name	Class/Type	Rate/Acre	Planting Zone	Planting Dates
Interstate Lespedeza	<i>Lespedeza sericea</i>	Permanent Grass	50(56)	1,2	March 1 – August 31
Weeping Lovegrass	<i>Eragrostis curvula</i>	Temporary Grass	10(11)		
Interstate Lespedeza	<i>Lespedeza sericea</i>	Permanent Grass	75(84)	1,2	September 1- February 28
Tall Fescue	<i>Festuca arundinacea</i>	Temporary Grass	50(56)		
Interstate Lespedeza	<i>Lespedeza sericea</i>	Permanent Grass	50(56)	3,4	April 1 – October 31
Weeping Love Grass	<i>Eragrostis curvula</i>	Temporary Grass	10(11)		
Interstate Lespedeza	<i>Lespedeza sericea</i>	Permanent Grass	50(56)	3,4	November 1 – March 31
Weeping Love Grass	<i>Eragrostis curvula</i>	Temporary Grass	10(11)		

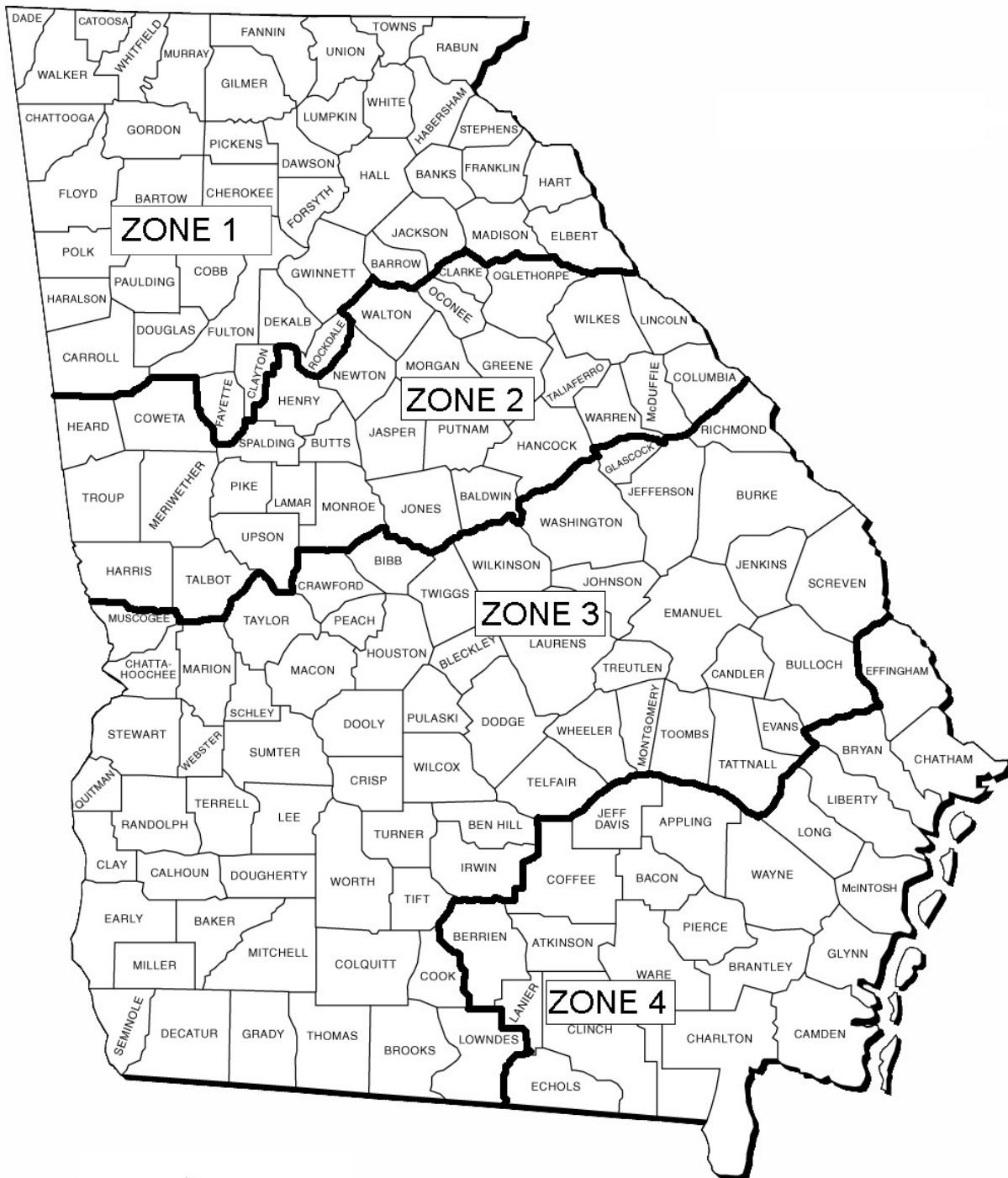
**NATIVE GRASS SEEDING TABLE 3**

**For Non-Mowable Slopes or Areas Designated as Permanent Native Grass Plots**  
 (Plant native seed mixes on back slopes, fill slopes and areas which will not be subject to frequent mowing – slopes steeper than 3:1)

<b>Common Name</b>	<b>Botanical Name</b>	<b>Class/Type</b>	<b>Rate/Acre</b>	<b>Planting Zone</b>	<b>Planting Dates</b>
Canada Wild Rye	<i>Elymus canadensis</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Virginia Wild Rye	<i>Elymus virginicus</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Bottle-brush Grass	<i>Hystrix patula</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Little Bluestem	<i>Schizachyrium scoparium</i> ( <i>Andropogon scoparius</i> )	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Indiangrass	<i>Sorghastrum nutans</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Eastern Gama Grass	<i>Tripsacum dactyloides</i>	Warm Season	Minimum 2 (2)	1,2,3,4,1,2,3,4	March 31 - August 31
Rice Cut Grass	<i>Leersia oryzoides</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Deertongue	<i>Panicum clandestinum</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Switchgrass	<i>Panicum virgatum</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31
Woolgrass	<i>Scirpus cyperinus</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
River Oats	<i>Chasmanthium latifolium</i>	Cool Season	Minimum 2 (2)	1,2,3,4	October 31 - March 31
Purple Top	<i>Tridens flavus</i>	Warm Season	Minimum 2 (2)	1,2,3,4	March 31 - August 31

**TEMPORARY GRASS SEEDING TABLE 4**

Species	Rates per 1000 sq. ft.	Rates per Acre	Planting Date By Zone		
			1 & 2	2	3 & 4
Rye (Grain)	3.9 lbs	168 lbs	8/1 - 11/30	8/15 - 12/1	9/1 - 2/28
Ryegrass	0.9 lbs	40 lbs	8/1 - 11/30	9/1 - 12/15	9/15 - 1/1
Rye & Annual Lespedeza	0.6 lbs 0.6 lbs	28 lbs 24 lbs	3/1 - 4/1	2/1 - 3/1	2/1 - 3/1
Weeping Lovegrass	0.1 lbs	4 lbs	3/15 - 6/15	3/15 - 7/15	3/15 - 7/15
Sudangrass	1.0 lbs	60 lbs	4/1 - 8/31	4/1 - 8/31	3/15 - 8/1
Browntop Millet	1.1 lbs	50 lbs	4/1 - 6/30	4/1 - 7/15	4/1 - 7/15
Wheat	3.9 lbs	168 lbs	9/1 - 12/31	9/1 - 12/31	9/15 - 1/31

**PLANTING ZONE MAP**

**Seed Properties and Rate of Application**

<b>Seed</b>	<b>Minimum Seed Purity (Percent)</b>	<b>Minimum Germination (Percent)</b>	<b>Rate of Application lb/acre (or lb/1,000 S.F.)</b>
Common Bermuda	98%	85%	10 lbs/ac hulled and/or unhulled
*	*	*	*

Seeding shall be performed as approved by the RPR.

**901-2.2 Lime.** Lime shall be ground limestone containing not less than 85% of total carbonates, and shall be ground to such fineness that 90% will pass through a No. 20 (850 µm) mesh sieve and 50% will pass through a No. 100 (150 µm) mesh sieve. Coarser material will be acceptable, providing the rates of application are increased to provide not less than the minimum quantities and depth specified in the special provisions on the basis of the two sieve requirements above. Dolomitic lime or a high magnesium lime shall contain at least 10% of magnesium oxide. Lime shall be applied at the rate of **2,000 lbs/ac**. All liming materials shall conform to the requirements of ASTM C602.

**901-2.3 Fertilizer.** Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash. They shall be applied at the rate and to the depth specified, and shall meet the requirements of applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

The fertilizers may be supplied in one of the following forms:

- a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;
- b. A finely-ground fertilizer soluble in water, suitable for application by power sprayers; or
- c. A granular or pellet form suitable for application by blower equipment.

Fertilizers shall be 6-12-12 commercial fertilizer and shall be spread at the rate of 1200 lbs/ac.

A second application of 10-10-10 fertilizer at 500 lbs/ac to be applied 90 days after grass is up, or as directed by the RPR.

**901-2.4 Soil for repairs.** The soil for fill and topsoiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the RPR before being placed.

**CONSTRUCTION METHODS**

**901-3.1 Advance preparation and cleanup.** After grading of areas has been completed and before applying fertilizer and ground limestone, areas to be seeded shall be raked or otherwise cleared of stones larger than 2 inches (50 mm) in any diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after the completion of grading and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be seeded shall be considered a satisfactory seedbed without additional treatment if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches (125 mm) as a result

of grading operations and, if immediately prior to seeding, the top 3 inches (75 mm) of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and if shaped to the required grade.

When the area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, any grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches (125 mm). Clods shall be broken and the top 3 inches (75 mm) of soil shall be worked into a satisfactory seedbed by discing, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

### **901-3.2 Dry application method.**

**a. Liming.** Lime shall be applied separately and prior to the application of any fertilizer or seed and only on seedbeds that have previously been prepared as described above. The lime shall then be worked into the top 3 inches (75 mm) of soil after which the seedbed shall again be properly graded and dressed to a smooth finish.

**b. Fertilizing.** Following advance preparations and cleanup fertilizer shall be uniformly spread at the rate that will provide not less than the minimum quantity stated in paragraph 901-2.3. Initial application shall be worked into the top 3" of soil about with lime application. Final application shall be uniformly spread.

**c. Seeding.** Grass seed shall be sown at the rate specified in paragraph 901-2.1 immediately after fertilizing. The fertilizer and seed shall be raked within the depth range stated in the special provisions. Seeds of legumes, either alone or in mixtures, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods required for grass and legume seeding.

**d. Rolling.** After the seed has been properly covered, the seedbed shall be immediately compacted by means of an approved lawn roller, weighing 40 to 65 pounds per foot (60 to 97 kg per meter) of width for clay soil (or any soil having a tendency to pack), and weighing 150 to 200 pounds per foot (223 to 298 kg per meter) of width for sandy or light soils.

### **901-3.3 Wet application method.**

**a. General.** The Contractor may elect to apply seed and fertilizer (and lime, if required) by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using the methods and equipment described herein. The rates of application shall be as specified in the special provisions.

**b. Spraying equipment.** The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons (190 liters) over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The unit shall also be equipped with a pressure pump capable of delivering 100 gallons (380 liters) per minute at a pressure of 100 lb / sq inches (690 kPa). The pump shall be mounted in a line that will recirculate the mixture through the tank whenever it is not being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for 5/8 inch (16 mm) solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be an indicating pressure gauge connected and mounted immediately at the back of the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 to 100 feet (6 to 30 m). One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For case of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet (15 m) in length shall be provided to which the nozzles may be connected.

**c. Mixtures.** Lime, if required, shall be applied separately, in the quantity specified, prior to the fertilizing and seeding operations. Not more than 220 pounds (100 kg) of lime shall be added to and mixed with each 100 gallons (380 liters) of water. Seed and fertilizer shall be mixed together in the relative proportions specified, but not more than a total of 220 pounds (100 kg) of these combined solids shall be added to and mixed with each 100 gallons (380 liters) of water.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. The Contractor shall identify to the RPR all sources of water at least two (2) weeks prior to use. The RPR may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the RPR following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within two (2) hours from the time they were mixed or they shall be wasted and disposed of at approved locations.

**d. Spraying.** Lime, if required, shall be sprayed only upon previously prepared seedbeds. After the applied lime mixture has dried, the lime shall be worked into the top 3 inches (75 mm), after which the seedbed shall again be properly graded and dressed to a smooth finish.

Mixtures of seed and fertilizer shall only be sprayed upon previously prepared seedbeds on which the lime, if required, shall already have been worked in. The mixtures shall be applied by means of a high-pressure spray that shall always be directed upward into the air so that the mixtures will fall to the ground like rain in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner as might produce erosion or runoff.

Particular care shall be exercised to ensure that the application is made uniformly and at the prescribed rate and to guard against misses and overlapped areas. Proper predetermined quantities of the mixture in accordance with specifications shall be used to cover specified sections of known area.

Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or pans over the area at intervals and observing the quantity of material deposited thereon.

On surfaces that are to be mulched as indicated by the plans or designated by the RPR, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

**901-3.4 Maintenance of seeded areas.** The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the RPR. Surfaces gullied or otherwise damaged



following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work done out of season, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the RPR. A grass stand shall be considered adequate when bare spots are one square foot (0.01 sq m) or less, randomly dispersed, and do not exceed 3% of the area seeded.

#### **METHOD OF MEASUREMENT**

**901-4.1** This work is incidental to the work performed. No separate payment shall be made.

#### **BASIS OF PAYMENT**

**901-5.1** N/A.

Payment will be made under:

#### **REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C602      Standard Specification for Agricultural Liming Materials

Federal Specifications (FED SPEC)

FED SPEC      JJJ-S-181, Federal Specification, Seeds, Agricultural

Advisory Circulars (AC)

AC 150/5200-33      Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

#### **END OF ITEM T-901**

## Item T-908 Mulching

### DESCRIPTION

**908-1.1** This item shall consist of furnishing, hauling, placing, and securing mulch on surfaces indicated on the plans or designated by the RPR.

### MATERIALS

**908-2.1 Mulch material.** Acceptable mulch shall be the materials listed below or any approved locally available material that is similar to those specified. Mulch shall be free from noxious weeds, mold, and other deleterious materials. Mulch materials, which contain matured seed of species that would volunteer and be detrimental to the proposed overseeding, or to surrounding farm land, will not be acceptable. Straw or other mulch material which is fresh and/or excessively brittle, or which is in such an advanced stage of decomposition as to smother or retard the planted grass, will not be acceptable.

**a. Hay.** Hay shall be native hay in an air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Hay shall be sterile, containing no fertile seed.

**b. Straw.** Straw shall be the stalks from threshed plant residue of oats, wheat, barley, rye, or rice from which grain has been removed. Furnish in air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Straw shall contain no fertile seed.

**c. Hay mulch containing seed.** Hay mulch shall be mature hay containing viable seed of native grasses or other desirable species stated in the special provisions or as approved by the RPR. The hay shall be cut and handled so as to preserve the maximum quantity of viable seed. Hay mulch that cannot be hauled and spread immediately after cutting shall be placed in weather-resistant stacks or baled and stored in a dry location until used.

**908-2.2 Inspection.** The RPR shall be notified of sources and quantities of mulch materials available and the Contractor shall furnish him with representative samples of the materials to be used 30 days before delivery to the project. These samples may be used as standards with the approval of the RPR and any materials brought on the site that do not meet these standards shall be rejected.

### CONSTRUCTION METHODS

**908-3.1 Mulching.** Before spreading mulch, all large clods, stumps, stones, brush, roots, and other foreign material shall be removed from the area to be mulched. Mulch shall be applied immediately after seeding. The spreading of the mulch may be by hand methods, blower, or other mechanical methods, provided a uniform covering is obtained.

Mulch material shall be furnished, hauled, and evenly applied on the area shown on the plans or designated by the RPR. Straw or hay shall be spread over the surface to a uniform thickness at the rate of 2 to 3 tons per acre (1800 - 2700 kg per acre) to provide a loose depth of not less than 1-1/2 inches (38 cm) nor more than 3 inches (75 mm). Other organic material shall be spread at the rate directed by the RPR. Mulch may be blown on the slopes and the use of cutters in the equipment for this purpose will be permitted to the extent that at least 95% of the mulch in place on the slope shall be 6 inches (150

mm) or more in length. When mulches applied by the blowing method are cut, the loose depth in place shall be not less than one inch (25 mm) nor more than 2 inches (50 mm).

**908-3.2 Securing mulch.** The mulch shall be held in place by light discing, a very thin covering of topsoil, pins, stakes, wire mesh, asphalt binder, or other adhesive material approved by the RPR. Where mulches have been secured by either of the asphalt binder methods, it will not be permissible to walk on the slopes after the binder has been applied. When an application of asphalt binder material is used to secure the mulch, the Contractor must take every precaution to guard against damaging or disfiguring structures or property on or adjacent to the areas worked and will be held responsible for any such damage resulting from the operation.

If the “peg and string” method is used, the mulch shall be secured by the use of stakes or wire pins driven into the ground on 5-foot (1.5-m) centers or less. Binder twine shall be strung between adjacent stakes in straight lines and crisscrossed diagonally over the mulch, after which the stakes shall be firmly driven nearly flush to the ground to draw the twine down tight onto the mulch.

### **908-3.3 Care and repair.**

a. The Contractor shall care for the mulched areas until final acceptance of the project. Care shall consist of providing protection against traffic or other use by placing warning signs, as approved by the RPR, and erecting any barricades that may be shown on the plans before or immediately after mulching has been completed on the designated areas.

b. The Contractor shall be required to repair or replace any mulch that is defective or becomes damaged until the project is finally accepted. When, in the judgment of the RPR, such defects or damages are the result of poor workmanship or failure to meet the requirements of the specifications, the cost of the necessary repairs or replacement shall be borne by the Contractor.

c. If the “asphalt spray” method is used, all mulched surfaces shall be sprayed with asphalt binder material so that the surface has a uniform appearance. The binder shall be uniformly applied to the mulch at the rate of approximately 8 gallons (32 liters) per 1,000 square feet (100 sq m), or as directed by the RPR, with a minimum of 6 gallons (24 liters) and a maximum of 10 gallons (40 liters) per 1,000 square feet (100 sq m) depending on the type of mulch and the effectiveness of the binder securing it. Asphalt binder material may be sprayed on the mulched slope areas from either the top or the bottom of the slope. An approved spray nozzle shall be used. The nozzle shall be operated at a distance of not less than 4 feet (1.2 m) from the surface of the mulch and uniform distribution of the asphalt material shall be required. A pump or an air compressor of adequate capacity shall be used to ensure uniform distribution of the asphalt material.

d. If the “asphalt mix” method is used, the mulch shall be applied by blowing, and the asphalt binder material shall be sprayed into the mulch as it leaves the blower. The binder shall be uniformly applied to the mulch at the rate of approximately 8 gallons (32 liters) per 1,000 square feet (100 sq m) or as directed by the RPR, with a minimum of 6 gallons (24 liters) and a maximum of 10 gallons (40 liters) per 1,000 square feet (100 sq m) depending on the type of mulch and the effectiveness of the binder securing it.

## **METHOD OF MEASUREMENT**

**908-4.1** Mulching shall be measured in square yards (square meters) on the basis of the actual surface area acceptably mulched.

**BASIS OF PAYMENT**

**908-5.1** Payment will be made at the contract unit price per square yard (square meter) for mulching. The price shall be full compensation for furnishing all materials and for placing and anchoring the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

n/a

**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 D977      Standard Specification for Emulsified Asphalt

Advisory Circulars (AC)

AC 150/5200-33      Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

**END OF ITEM T-908**

**END OF ITEM T-908**

## **DIVISION 20 - FAA – Lighting Installation**

### **Item L-101 Airport Rotating Beacons**

#### **DESCRIPTION**

**101-1.1** This item shall consist of removal of the existing beacon and furnishing and installing a new airport rotating beacon. The work shall include mounting, leveling, wiring, painting, maintaining, and testing of the beacon. In addition, this item also includes all materials and incidentals necessary to place the beacon in a serviceable condition (as a completed unit) to the satisfaction of the RPR. This item shall include a mounting platform if specified in the plans.

#### **EQUIPMENT AND MATERIALS**

##### **101-2.1 General.**

**a.** Airport lighting equipment and materials covered by advisory circulars (ACs) shall be certified in AC 150/5345-53, Airport Lighting Equipment Certification Program (ALECP) and listed in the ALECP Addendum.

**b.** All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

**c.** Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials that are per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials, that are per these specifications, at the Contractor's cost.

**d.** All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly mark each copy to identify the products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components or electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that accrue directly or indirectly from late submissions or resubmissions of submittals.

**e.** The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the Contract Documents plans and specifications. The Contractor's submittals shall be in an electronic pdf file format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed in this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

**101-2.2 Beacon.** The beacon shall be a Type **L-801A** Class **1** beacon meeting the requirements of AC 150/5345-12, Specification for Airport and Heliport Beacons.

**101-2.3 Beacon installation.** Installation shall be as shown on the plans. Provide two lamp sets as spares.

**101-2.4 Panel boards and breakers.** Panel boards and breakers shall conform to the requirements of Federal Specification W-P-115, Panel, Power Distribution.

**101-2.5 Weatherproof cabinets.** The weatherproof cabinets shall conform to National Electrical Manufacturers Association Standards (NEMA) and shall be constructed of steel not less than No. 16 United States Standard (USS) gauge.

**101-2.6 Electrical wire.** For ratings up to 600 volts, moisture and heat resistant thermoplastic wire conforming to Commercial Item Description A-A-59544A Type THWN-2 shall be used. The wires shall be the type, size, number of conductors, and voltage shown in the plans or in the proposal.

**101-2.7 Conduit.** Rigid steel conduit and fittings shall be per Underwriters Laboratories Standards 6, 514B, and 1242.

**101-2.8 Paint.**

a. Priming paint for non-galvanized metal surfaces shall be a high solids alkyd primer compatible with the manufacturer's recommendations for the intermediate or topcoat.

b. Priming paint for galvanized metal surfaces shall be a zinc-rich epoxy primer paint per MIL-DTL-24441/19C, Formula 159, Type III. Use MIL-24441 thinner per paint manufacturer's recommendations.

c. Orange paint for the body and the finish coats on metal and wood surfaces shall consist of a ready-mixed non-fading paint meeting the requirements of Master Painter's Institute (MPI) Reference #9 (gloss). The color shall be per Federal Standard 595, International Orange Number 12197.

d. White paint for body and finish coats on metal and wood surfaces shall be ready-mixed paint per the Master Painter's Institute, Reference #9, Exterior Alkyd, Gloss, volatile organic content (VOC) Range E2.

e. Priming paint for wood surfaces shall be mixed on the job by thinning the above-specified orange or white paint with 1/2 pint (0.24 liter (l)) of raw linseed oil to each gallon (liter).

## CONSTRUCTION METHODS

**101-3.1. Placing the beacon.** The beacon shall be mounted as shown in the plans.

**101-3.2 Hoisting and mounting.** The beacon shall be hoisted to the mounting platform by using suitable slings and hoisting tackle. Before fastening the beacon to the mounting platform, the mounting holes shall be checked for correct spacing. Beacon base or mounting legs shall not be strained or forced out of position to fit incorrect spacing of mounting holes. The beacon base shall be raised first, set in position, and bolted in place. The drum shall then be raised and assembled to the base.

**101-3.3 Leveling.** After the beacon has been mounted, it shall be accurately leveled following the manufacturer's instructions. The leveling shall be checked in the presence of the RPR and shall be to the RPR's satisfaction.

**101-3.4 Servicing.** Before placing the beacon in operation, the Contractor shall check the manufacturer's manual for proper servicing requirements. Follow the manufacturer's servicing instructions for each size of beacon.

**101-3.5 Beam adjustment.** After the beacon has been mounted and leveled, the elevation of the beam shall be adjusted. The final beam adjustments shall be made at night so that results can be readily observed. The beams shall be adjusted to the elevation directed by the RPR or as shown in the plans. See AC 150/5340-30 for additional information about airport beacon beam adjustment.

**101-3.6 Beacon mounting platform.** Where the beacon is to be mounted at a location other than the beacon tower and where a special mounting platform is required, the construction of the mounting platform and any necessary lightning protection equipment shall be per the details shown in the plans.

**101-3.7 Wiring.** The Contractor shall furnish all necessary labor and materials and shall make complete above ground electrical connections per the wiring diagram furnished with the project plans. The electrical installation shall conform to the requirements of the latest edition of National Fire Protection Association, NFPA-70, National Electrical Code (NEC).

If underground cable for the power feed from the transformer vault to the beacon site and duct for this cable installation is required, the cable, ground rods and duct shall be installed as shown on the plans.

If shown on the plans, the Contractor shall connect the tell-tale relay mechanism in the beacon to energize the tower obstruction light circuit when failure of the beacon service (primary) lamp occurs.

If lightning protection is specified in the plans, it shall be installed per Item L-103, Airport

Beacon Towers, paragraph 103-2.3.

**101-3.8 Panel and cabinet.** If shown on the plans, the Contractor shall furnish and install at the top of the beacon tower or mounting platform a circuit-breaker panel consisting of four 15-ampere breakers mounted in a weather-proof cabinet to provide separate protection for the circuits to the beacon lamps, motor, obstruction lights, and other equipment. The cabinet shall be located on the side of the beacon platform as shown on the plans or as directed by the RPR.

**101-3.9 Conduit.** All exposed wiring shall be run in not less than 3/4 inch (19 mm) galvanized rigid steel conduit. Outdoor rated, liquid-tight, flexible metal conduit may be used for final connection at the beacon equipment. No conduit shall be installed on top of a beacon platform floor. All conduits shall be installed to provide for drainage. If mounted on a steel beacon tower, the conduit shall be fastened to the tower members with Wraplock® straps (or equivalent), clamps, or approved fasteners, spaced approximately 5 feet (1.5 m) apart. The conduit shall be fastened to wooden structures with galvanized pipe straps and with galvanized wood screws not less than No. 8 or less than 1-1/4 inches (32 mm) long. There shall be at least two fastenings for each 10 feet (3 m) length.

**101-3.10 Booster transformer.** Not used.

**101-3.11 Photoelectric control.** If shown in the plans or specified in the job specifications, the Contractor shall furnish and install an automatic control switch at the location indicated in the plans. The switch shall be a photoelectric type. It shall be a standard commercially available unit that will energize when the illumination on a vertical surface facing North decreases to 25 to 35 foot-candles (269 to 377 lux). The photoelectric switch should de-energize when the illumination rises to 50 to 60 foot-candles (538 to 646 lux). The photoelectronic switch shall be installed, connected, and adjusted per the manufacturer's instructions.

**101-3.12 Obstruction lights.** Unless otherwise specified, the Contractor shall install on the top of the beacon tower or mounting platform two L-810 obstruction lights on opposite corners. These lights shall be mounted on conduit extensions to a height of not less than 4 inches (100 mm) above the top of the beacon.

**101-3.13 Painting.** If construction of a wooden mounting platform is stipulated in the proposal as part of this item, all wooden parts of the platform shall be given one priming coat of white or aviation-orange paint after fabrication but before erection and one body and one finish coat of international-orange paint after erection. Steel mounting platforms shall be given one priming coat of corrosion-inhibiting primer before erection and one body and one finish coat of international-orange paint after erection. All equipment installed under this contract and exposed to the weather shall be given one body and one finish coat of international-orange (per Federal Standard 595, Number 12197) or white paint as required. This shall include the beacon (except glass surfaces), beacon base, breaker cabinet, all conduit, and transformer cases. It shall not include lightning protection system air terminals or obstruction light globes. Apply the paint uniformly at the proper consistency. The finished paint shall be free from sags,



holidays, and smears. Each coat of paint shall be given ample time to dry and harden before the next coat of paint is applied. A minimum of three (3) days shall be allowed for drying on wood surfaces, and a minimum of four (4) days shall be allowed for drying on metal surfaces. Painting shall not be performed in cold, damp, foggy, dusty, or frosty atmospheres, or when the air temperature is below 40°F (4°C), nor started when the weather forecast indicates such conditions for the day.

All surfaces shall be cleaned before painting. The surfaces shall be dry and free from scale, grease, rust, dust, and dirt. All knots in wood surfaces shall be covered with shellac immediately before applying the priming coat of paint. Nail holes and permissible imperfections shall be filled with putty. The ready-mixed paint shall be thinned for the priming and body coats per the manufacturer's recommendations. In the absence of such recommendations, the following shall apply:

a. Body coats (for both wood and steel surfaces) - add 1/2 pint (0.24 liter) of turpentine to each gallon (liter) of ready-mixed paint for body coats.

b. Finish coats (for both wood and steel surfaces) the ready-mixed paint shall be used as it comes from the container for finish coats.

**101-3.14 Testing.** The beacon installation shall be fully tested as a completed unit prior to acceptance. These tests shall include operation of the lamp-changer and performing insulation resistance and voltage readings. The insulation resistance to ground of the beacon power supply circuit shall be not less than 100 megohms when measured ungrounded. The Contractor must furnish testing equipment. Tests shall be conducted in the presence of the RPR and shall be to the RPR's satisfaction.

#### **METHOD OF MEASUREMENT**

**101-4.1** The quantity to be paid for shall be the number of beacons installed as completed units in place, accepted, and ready for operation.

#### **BASIS OF PAYMENT**

**101-5.1** Payment will be made at the contract unit price for each completed and accepted job. This price shall be full compensation for removal and replacement of existing beacon and furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item L-101-5.1 L-801A, Class 1, Airport Rotating Beacon, in place (including removal and disposal of existing beacon) - per unit

## 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 150/5345-7 Specification for L-824 Underground Cable for Airport Lighting Circuits

AC 150/5345-12 Specification for Airport and Heliport Beacons

AC 150/5340-30 Design and Installation Details for Airport Visual Aids

AC 150/5345-53 Airport Lighting Equipment Certification Program

AC 150/5390-2 Heliport Design

### Commercial Item Description

A-A-59544A Cable and Wire, Electrical (Power, Fixed Installation)

### Federal Specification (FED SPEC)

FED SPEC W-P-115 Panel, Power Distribution

### Federal Standard (FED STD)

FED STD 595 Colors Used in Government Procurement

### Master Painter Institute (MPI)

MPI Reference #9 Alkyd, Exterior, Gloss (MPI Gloss Level 6)

### Mil Spec

MIL-DTL-24441C/19C Paint, Epoxy-Polyamide, Zinc Primer, Formula 159, Type III

### National Fire Protection Association (NFPA)

NFPA-70 National Electric Code (NEC)

NFPA-780 Standard for the Installation of Lightning Protection Systems

### Underwriters Laboratories (UL)

UL Standard 6 Electrical Rigid Metal Conduit – Steel

UL Standard 514B Conduit, Tubing, and Cable Fittings

UL Standard 1242 Electrical Intermediate Metal Conduit - Steel

**END OF ITEM L-101**

### **Item L-103 Airport Beacon Towers**

#### **DESCRIPTION**

**103-1.1** This item shall consist of removal of existing beacon tower; furnishing and installing an airport beacon tower of the type shown in the plans, per these specifications. This work shall include the clearing of the site, erection of the tower, installation of lightning protection, painting, and all incidentals necessary to place it in operating condition as a completed unit to the satisfaction of the RPR. See advisory circular (AC) 150/5340-30 for additional installation information about airport beacon towers.

#### **EQUIPMENT AND MATERIALS**

##### **103-2.1 General.**

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

b. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials, that are per these specifications, at the Contractor's cost.

c. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals to components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be in an electronic pdf file format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

**103-2.2 Tower.** The beacon tower shall be 45 ft tall tilt down.

**103-2.3 Lightning protection.** Lightning protection shall comply with NFPA-780, Standard for the Installation of Lightning Protection Systems. All materials shall comply with NFPA 780 Class II material requirements regardless of the tower height.

**103-2.4 Paint.**

a. Priming paint for galvanized steel towers shall be zinc dust-zinc oxide primer paint per MIL-DTL-24441C/19B. Use MIL-24441 thinner per paint manufacturer's recommendations.

b. Priming paint for non-galvanized steel towers shall be a high solids alkyd primer per the Master Painter's Institute (MPI), Reference #9, Exterior Alkyd, Gloss.

c. Orange paint for the body and the finish coats on metal and wood surfaces shall consist of a ready-mixed non-fading paint MPI Reference #9 (gloss). The color shall be per Federal Standards 595, International Orange Number 12197.

d. White paint for a steel tower shall be ready-mixed paint per MPI #8.

### CONSTRUCTION METHODS

**103-3.1 Clearing and grading.** The site on which the beacon tower is to be erected shall be cleared and leveled. All trees and brush shall be removed from the area within a distance of 25 feet (7.5 m) from the tower or as called for in the plans. Stumps shall be removed to a depth of 18 inches (0.5 m) below finished grade and the excavation filled with earth and tamped. If a transformer vault or other structure is included as part of the installation, the area shall be cleared to a distance of 25 feet (7.5 m) from these structures. The ground near the tower shall be leveled to permit the operation of mowing machines. The leveling shall extend at least 2 feet (60 cm) outside the tower legs. All debris removed from the tower site shall be disposed of by the Contractor to the satisfaction of the RPR and per federal, state, or local regulations.

**103-3.2 Excavation and fill.** Excavation for the tower footings shall be carried to a minimum of 4 inches (100 mm) below the footing depth. The excess excavation below the footing depth shall then be backfilled with gravel or crushed stone and compacted to the required level. The footing plates shall be installed, and a thickness of not less than 18 inches (0.5 m) of the same gravel or crushed stone shall be placed immediately above the footing plates in layers of not over 6 inches (150 mm). Each layer above the footing plates shall be thoroughly tamped in place. The remainder of the backfill may be of excavated earth placed in layers not to exceed 6 inches (150 mm). Each layer shall be thoroughly compacted by tamping.

Where solid rock is encountered, which prevents the carrying of the foundation legs to the required depth but which is of sufficient strength to use hold-down bolts, the tower anchor posts shall be cut off at the required length and the hold-down bolts shall be installed as indicated in the plans with the approval of the RPR. Each tower leg shall be anchored to the rock by means of two 7/8-inch (22 mm) diameter by 3 feet (1 m) long expansion or split bolts and shall be grouted with neat Portland cement into holes drilled into the natural rock. Except as required for rock foundations, the footing members shall not be cut off or shortened. If excavated material is of such consistency that it will not readily compact when backfilled, the RPR may order the excavation backfilled with concrete or other suitable

material.

The concrete footing for tubular beacon towers shall be installed per the manufacturer's recommendations. Portions of the footing in the topsoil layer shall not be included in the footing height.

**103-3.3 Erection.** Tower erection as shown on the plans and detailed erection drawings furnished by the manufacturer shall be strictly followed during construction. All towers shall be erected in sections from the ground up unless otherwise specified. For final assembly, all bolts and fastenings shall be installed, and the structure shall be plumb, true, square, and level. Nuts shall be taken up to a firm bearing after which the bolts shall, if necessary, be cut to proper length to protrude three full threads. Approved locknuts shall be placed on each bolt over the regular nut. Ladder bolts shall be inserted with the head to the outer face of the tower. Diagonal, leg, and handrail bolts shall be installed with nuts on the outer face of the tower, unless otherwise specified. Bent parts shall be straightened before erection without damage to the protective coating. Surfaces abraded or bared of protective coating shall be painted with the proper priming paint per these specifications.

The Contractor shall install the ladder on the side of the tower adjacent to the driveway or most accessible approach to the tower. Tubular beacon towers shall be erected per the manufacturer's recommendations. The safety cable shall be located on the side of the tower adjacent to the driveway or most accessible approach to the tower.

**103-3.4 Lightning protection.** The Contractor shall furnish and install a Class II lightning protection system in accordance with NFPA 780. Ground rods and underground cables shall be installed in accordance with the plans.

Down-conductor cables shall be securely fastened to the surface of the tower leg at 5 feet (1.5 m) intervals with suitable bronze fasteners having bronze or noncorrosive metal bolts. Sharp turns or bends in the down conductor will not be permitted.

All connections of cable to cable, cable to air terminals, and cable to ground plates or rods shall be made with solder-less connectors or noncorrosive metal approved by the RPR and shall be of substantial construction.

The down-conductor cable shall be securely attached to ground rods or plates placed at least 2 feet (60 cm) away from the tower foundations. The ground rod shall be driven into the ground so that the top is at least 6 inches (150 mm) below grade. The down-conductor shall be firmly attached to the ground plate or rod by means of an exothermic weld only. Plates shall be embedded in an area of permanent moisture.

The complete lightning protection installation shall be accomplished to the satisfaction of the RPR. The resistance to ground of any part of the lightning protection system shall not exceed 25 ohms. If a single rod grounding electrode has a resistance to earth of over 25 ohms, then install one supplemental rod not less than 10 feet from the first rod. If desired resistance to ground levels are still not achieved, see FAA-STD-019 for guidance on the application of coke breeze.

**103-3.5 Painting.** The Contractor shall furnish all materials and labor for painting the beacon tower. The color scheme for the steel tower shall be as shown in the plans.

**a. Parts to be painted.** Tower parts (except those parts to be exposed to earth) shall not be treated or primed before erection. All tower parts placed below ground level or within 12 inches (300 mm) above ground level shall be given two coats of approved asphalt paint.

Apply the proper consistency of paint uniformly. The finished paint shall be free from sags, holidays, and smears. Division lines between colors shall be sharply defined. Each coat of paint shall be given ample time to dry and harden before the next coat is applied. A minimum of four (4) days shall be allowed for drying on metal surfaces. Painting shall not be done in cold, damp, foggy, or dusty atmospheres, or when air temperature is below 40°F (4°C), nor started when the weather forecast indicates such conditions for the day.

All surfaces shall be cleaned before painting. The surfaces shall be dry and free from scale, grease, rust, dust, and dirt when paint is applied.

The number of coats of paint applied shall be per the following instructions:

**b. Steel towers, galvanized.** One priming coat of zinc dust-zinc oxide primer after erection and one body and one finish of white or orange paint (as required by the color scheme) shall be applied after erection.

**c. Steel towers, not galvanized.** One priming coat of corrosion-inhibiting primer and one body and one finish coat of white or orange paint (as required by the color scheme) shall be applied after erection.

The above specified orange and white ready-mixed paints shall be thinned for the body coats per the manufacturer's recommendations. In the absence of such recommendations, the following shall apply:

**d. Body coats.** Add not more than 1/2 pint (0.24 liters) of turpentine to each gallon (liter) of ready-mixed paint for body coats.

**e. Finish coats.** The ready-mixed paint shall be used as it comes from the container for finish coats.

#### METHOD OF MEASUREMENT

**103-4.1** The quantity to be paid for under this item shall be the number of airport beacon towers installed as completed units in place, accepted, and ready for operation.

#### BASIS OF PAYMENT

**103 5.1** Payment will be made at the contract unit price for each completed and accepted job. This price shall be full compensation for of removal of existing beacon tower and installation of new tilt-down beacon pole; furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item L-103-5.1 Remove existing Tower and Foundation and Replace Beacon Tower and Foundation, in  
Place per unit

### 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 150/5340-30      Installation and Design Details for Airport Visual Aids

Master Painter's Institute (MPI)

MPI Reference #8      Alkyd, Exterior, Flat (MPI Gloss Level 1)

MPI Reference #9      Alkyd, Exterior, Gloss (MPI Gloss Level 6)

Federal Standard (FED STD)

FED STD 595      Colors Used in Government Procurement

Mil Standard

MIL-DTL-24441C/19B      Paint, Epoxy-Polyamide, Zinc Primer, Formula 159, Type III

National Fire Protection Association (NFPA)

NFPA-780      Standard for the Installation of Lightning Protection Systems

**END OF ITEM L-103**



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## **Item L-107 Airport Wind Cones**

### **DESCRIPTION**

**107-1.1** This item shall consist of removal of existing airport wind cones; furnishing and installing an airport wind cone per these specifications and per the dimensions, design, and details shown in the plans.

The work shall include the furnishing and installation of a support for mounting the wind cone, the specified interconnecting wire, and a concrete foundation. The item shall also include all cable connections, conduit and conduit fittings, the furnishing and installation of all lamps, ground rod and ground connection, the testing of the installation, and all incidentals necessary to place the wind cone in operation (as a completed unit) to the satisfaction of the RPR.

### **EQUIPMENT AND MATERIALS**

#### **107-2.1 General.**

**a.** Airport lighting equipment and materials covered by advisory circulars (ACs) shall be certified in AC 150/5345-53, Airport Lighting Equipment Certification Program (ALECP) and listed in the ALECP Addendum.

**b.** All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

**c.** Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications, at the Contractor's cost.

**d.** All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

**e.** The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be in electronic pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures, that do not meet the system design and the standards and codes, specified in this document.

**f.** All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by

the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

**All LED light fixtures with the exception of obstruction lighting (AC 150/5345-43) must be warranted by the manufacturer for a minimum of 4 years after date of installation inclusive of all electronics.**

**107-2.2 Wind cones.** The primary wind cone assembly shall be Type **L-807**, Style **I-A**, Size **2 (LED)**.

**107-2.3 Electrical wire and cable.** Cable rated up to 5,000 volts in conduit shall conform to AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits. For ratings up to 600 volts, moisture and heat resistant thermoplastic wire conforming to Commercial Item Description A-A-59544A Type THWN-2 shall be used. The wires shall be of the type, size, number of conductors, and voltage shown in the plans or in the proposal.

**107-2.4 Conduit.** Rigid steel conduit and fittings shall conform to the requirements of Underwriters Laboratories Standards 6, 514B, and 1242.

**107-2.5 Plastic conduit (for use below grade only).** Plastic conduit and fittings shall be per the following:

- UL 514B covers W-C-1094 - Conduit fittings all types, Classes 1 thru 3 and 6 thru 10
- UL 514C covers W-C-1094 - all types, Class 5 junction box and cover in plastic (polyvinyl chloride (PVC))
- UL 651 covers W-C-1094 - Rigid PVC Conduit, types I and II, Class 4
- UL 651A covers W-C-1094 - Rigid PVC Conduit and high-density polyethylene (HDPE) Conduit type III and Class 4

Underwriters Laboratories Standard UL-651 shall be one of the following, as shown in the plans:

- a. Type I—Schedule 40 PVC suitable for underground use either direct-buried or encased in concrete.
- b. Type II—Schedule 40 PVC suitable for either above ground or underground use.

Plastic conduit adhesive shall be a solvent cement manufactured specifically for the purpose of gluing the type of plastic conduit and fitting.

**107-2.6 Concrete.** The concrete for foundations shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures or per state department of transportation structural concrete with minimum 25% Type F fly ash, and a minimum allowable compressive strength of 4,000 psi (28 MPa).

**107-2.7 Paint.**

a. Priming paint for non-galvanized metal surfaces shall be a high solids alkyd primer compatible with the manufacturer's recommendations for the intermediate or topcoat.

b. Priming paint for galvanized metal surfaces shall be zinc dust-zinc oxide primer paint conforming to MIL-DTL-24441C/19B. Use MIL-24441 thinner per paint manufacturer's recommendations.

c. Orange paint for the body and the finish coats on metal and wood surfaces shall consist of a ready-mixed non-fading paint per Master Painter's Institute (MPI) Reference #9 (gloss). The color shall be per Federal Standards 595, International Orange, Number 12197.

d. White paint for body and finish coats on metal and wood surfaces shall be ready-mixed paint conforming to the MPI, Reference #9, Exterior Alkyd, Gloss.

e. Priming paint for wood surfaces shall be mixed on the job by thinning the above specified aviation-orange or white paint by adding 1/2 pint (0.24 liter) of raw linseed oil to each gallon (liter).

### CONSTRUCTION METHODS

**107-3.1 Installation.** The hinged support or hinged pole shall be installed on a concrete foundation per the plans.

**107-3.2 Support pole erection.** The Contractor shall erect the pole on the foundation following the manufacturer's requirements and erection details. The pole shall be level and secure.

**107-3.3 Electrical connection.** The Contractor shall furnish all labor and materials and shall make complete electrical connections per the wiring diagram furnished with the project plans. The electrical installation shall conform to the requirements of the latest edition of National Fire Protection Association, NFPA-70, National Electric Code (NEC).

Underground cable and duct for cable installation shall be installed in accordance with Item L-108, Underground Power Cables for Airports, and Item L-110, Airport Underground Electrical Duct Banks and Conduits in locations as shown on the plans.

**107-3.4 Booster transformer.** Not used.

**107-3.5 Ground connection and ground rod.** The Contractor shall furnish and install a ground rod, grounding cable, and ground clamps for grounding the "A" frame of the 12-foot (3.7-m) assembly or pipe support of the 8-foot (2.4-m) support near the base. The ground rod shall be of the type, diameter and length specified in Item L-108, Underground Power Cable for Airports. The ground rod shall be driven into the ground adjacent to the concrete foundation (minimum distance from foundation of 2 feet (60 cm)) so that the top is at least 6 inches (150 mm) below grade. The grounding cable shall consist of No. 6 American wire gauge (AWG) minimum stranded copper wire or larger and shall be firmly attached to the ground rod by exothermic welding. If an exothermic weld is not possible, connections to the grounding bus shall be made by using connectors approved for direct burial in soil or concrete per UL 467. The other end of the grounding cable shall be securely attached to a leg of the frame or to the base of the pipe support with non-corrosive metal and shall be of substantial construction. The resistance to ground shall not exceed 25 ohms. If a single rod grounding electrode has a resistance to earth of over 25 ohms, then install one supplemental rod not less than 10 feet from the first rod. If desired resistance to ground levels are still not achieved, see FAA-STD-019 for guidance on the application of coke breeze.

**107-3.6 Painting.** Three coats of paint shall be applied (one prime, one body, and one finish) to all exposed material installed under this item except the fabric cone, obstruction light globe, and lamp reflectors. The wind cone assembly, if already painted upon receipt, shall be given one finish coat of paint in lieu of the three coats specified above. The paint shall be per MPI Reference #9 (gloss). The color shall be per Federal Standard 595, International Orange, Number 12197.

**107-3.7 Light sources.** The Contractor shall furnish and install lamps per the manufacturer's instruction book.

**107-3.8 Chain and padlock.** The Contractor shall furnish and install a suitable operating chain for lowering and raising the hinged top section. The chain shall be attached to the pole support in a manner to prevent the light fixture assembly from striking the ground in the lowered position.

A padlock shall also be furnished by the Contractor on the 8-foot (2.4-m) wind cone for securing the hinged top section to the fixed lower section. Keys for the padlock shall be delivered to the RPR.

**107-3.9 Segmented circle.** The segmented circle shall be constructed as shown on the Plans.

#### METHOD OF MEASUREMENT

**107-4.1** The quantity to be paid shall be the number of wind cones installed as completed units in place, accepted, and ready for operation.

**107-4.2** The quantity of segmented circle airport marker systems to be paid for shall be the number of systems installed as completed units in place, accepted, and ready for operation.

#### BASIS OF PAYMENT

**107-5.1** Payment will be made at the contract unit price for each completed and accepted job. This price shall be full compensation for removal of existing airport wind cones; furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

**107-5.2** Payment will be made at the contract unit price for each segmented circle airport marker system. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item L-107-5.1 Removal of Existing Wind Cone and Foundation -- per Each

Item L-107-5.2 L-807, Style I-A, Size 2 (LED) Wind Cone and Foundation, in Place -- per Each

Item L-107-5.3 Refurbishment of Segmented Circle Marker System, in Place -- per Each

#### REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

##### Advisory Circulars (AC)

AC 150/5340-5	Segmented Circle Airport Marker System
AC 150/5340-30	Design and Installation Details for airport Visual Aids
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-27	Specification for Wind Cone Assemblies
AC 150/5345-53	Airport Lighting Equipment Certification Program

##### Commercial Item Description

A-A-59544	Cable and Wire, Electrical (Power, Fixed Installation)
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##### Federal Standard (FED STD)

FED STD 595	Colors Used in Government Procurement
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## Master Painter's Institute (MPI)

MPI Reference #9 Alkyd, Exterior, Gloss (MPI Gloss Level 6)

## Mil Standard

MIL-DTL-24441C/19B Paint, Epoxy-Polyamide, Zinc Primer, Formula 159, Type III

## Underwriters Laboratories (UL)

UL Standard 6 Electrical Rigid Metal Conduit – Steel

UL Standard 514B Conduit, Tubing, and Cable Fittings

UL Standard 514C Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers

UL Standard 651 Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings

UL Standard 651A Type EB and A Rigid PVC Conduit and HDPE Conduit

UL Standard 1242 Electrical Intermediate Metal Conduit - Steel

## National Fire Protection Association (NFPA)

NFPA-70 National Electric Code (NEC)

**END OF ITEM L-107**

**Item L-108 Underground Power Cable for Airports****DESCRIPTION**

**108-1.1** This item shall consist of furnishing and installing power cables that are direct buried and furnishing and/or installing power cables within conduit or duct banks per these specifications at the locations shown on the plans. It includes excavation and backfill of trench for direct-buried cables only. Also included are the installation of counterpoise wires, ground wires, ground rods and connections, cable splicing, cable marking, cable testing, and all incidentals necessary to place the cable in operating condition as a completed unit to the satisfaction of the RPR. This item shall not include the installation of duct banks or conduit, trenching and backfilling for duct banks or conduit, or furnishing or installation of cable for FAA owned/operated facilities.

**EQUIPMENT AND MATERIALS****108-2.1 General.**

**a.** Airport lighting equipment and materials covered by advisory circulars (AC) shall be approved under the Airport Lighting Equipment Certification Program per AC 150/5345-53, current version.

**b.** All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the RPR.

**c.** Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

**d.** All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

**e.** The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format. The RPR reserves the right to reject any and all equipment, materials, or procedures that do not meet the system design and the standards and codes, specified in this document.

**f.** All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's

discretion, with no additional cost to the Owner. The Contractor shall maintain a minimum insulation resistance in accordance with paragraph 108-3.10e with isolation transformers connected in new circuits and new segments of existing circuits through the end of the contract warranty period when tested in accordance with AC 150/5340-26, Maintenance Airport Visual Aid Facilities, paragraph 5.1.3.1, Insulation Resistance Test.

**108-2.2 Cable.** Underground cable for airfield lighting facilities (runway and taxiway lights and signs) shall conform to the requirements of AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits latest edition. Conductors for use on 6.6 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #8 American wire gauge (AWG), L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. Conductors for use on 20 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #6 AWG, L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. L-824 conductors for use on the L-830 secondary of airfield lighting series circuits shall be sized in accordance with the manufacturer's recommendations. All other conductors shall comply with FAA and National Electric Code (NEC) requirements. Conductor sizes noted above shall not apply to leads furnished by manufacturers on airfield lighting transformers and fixtures.

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Commercial Item Description A-A-59544A and shall be type THWN-2, 75°C for installation in conduit and RHW-2, 75°C for direct burial installations. Conductors for parallel (voltage) circuits shall be type and size and installed in accordance with NFPA-70, National Electrical Code.

Unless noted otherwise, all 600-volt and less non-airfield lighting conductor sizes are based on a 75°C, THWN-2, 600-volt insulation, copper conductors, not more than three single insulated conductors, in raceway, in free air. The conduit/duct sizes are based on the use of THWN-2, 600-volt insulated conductors. The Contractor shall make the necessary increase in conduit/duct sizes for other types of wire insulation. In no case shall the conduit/duct size be reduced. The minimum power circuit wire size shall be #12 AWG.

Conductor sizes may have been adjusted due to voltage drop or other engineering considerations. Equipment provided by the Contractor shall be capable of accepting the quantity and sizes of conductors shown in the Contract Documents. All conductors, pigtails, cable step-down adapters, cable step-up adapters, terminal blocks and splicing materials necessary to complete the cable termination/splice shall be considered incidental to the respective pay items provided.

Cable type, size, number of conductors, strand and service voltage shall be as specified in the Contract Document.

**108-2.3 Bare copper wire (counterpoise, bare copper wire ground and ground rods).** Wire for counterpoise or ground installations for airfield lighting systems shall be No. 6 AWG bare solid copper wire for counterpoise and/or No. 6 AWG insulated stranded for grounding bond wire per ASTM B3 and ASTM B8, and shall be bare copper wire. For voltage powered circuits, the equipment grounding conductor shall comply with NEC Article 250.

Ground rods shall be copper or copper-clad steel. The ground rods shall be of the length and diameter specified on the plans, but in no case be less than 8 feet (2.4 m) long and 5/8 inch (16 mm) in diameter.

**108-2.4 Cable connections.** In-line connections or splices of underground primary cables shall be of the type called for on the plans, and shall be one of the types listed below. No separate payment will be made for cable connections.



**a. The cast splice.** A cast splice, employing a plastic mold and using epoxy resin equivalent to that manufactured by 3M™ Company, "Scotchcast" Kit No. 82-B, or an approved equivalent, used for potting the splice is acceptable.

**b. The field-attached plug-in splice.** Field attached plug-in splices shall be installed as shown on the plans. The Contractor shall determine the outside diameter of the cable to be spliced and furnish appropriately sized connector kits and/or adapters. Tape or heat shrink tubing with integral sealant shall be in accordance with the manufacturer's requirements. Primary Connector Kits manufactured by Amerace, "Super Kit", Integro "Complete Kit", or approved equal is acceptable.

**c. The factory-molded plug-in splice.** Specification for L-823 Connectors, Factory-Molded to Individual Conductors, is acceptable.

**d. The taped or heat-shrink splice.** Taped splices employing field-applied rubber, or synthetic rubber tape covered with plastic tape is acceptable. The rubber tape should meet the requirements of ASTM D4388 and the plastic tape should comply with Military Specification MIL-I-24391 or Commercial Item Description A-A-55809. Heat shrinkable tubing shall be heavy-wall, self-sealing tubing rated for the voltage of the wire being spliced and suitable for direct-buried installations. The tubing shall be factory coated with a thermoplastic adhesive-sealant that will adhere to the insulation of the wire being spliced forming a moisture- and dirt-proof seal. Additionally, heat shrinkable tubing for multi-conductor cables, shielded cables, and armored cables shall be factory kits that are designed for the application. Heat shrinkable tubing and tubing kits shall be manufactured by Tyco Electronics/ Raychem Corporation, Energy Division, or approved equivalent.

In all the above cases, connections of cable conductors shall be made using crimp connectors using a crimping tool designed to make a complete crimp before the tool can be removed. All L-823/L-824 splices and terminations shall be made per the manufacturer's recommendations and listings.

All connections of counterpoise, grounding conductors and ground rods shall be made by the exothermic process or approved equivalent, except that a light base ground clamp connector shall be used for attachment to the light base. All exothermic connections shall be made per the manufacturer's recommendations and listings.

**108-2.5 Splicer qualifications.** Every airfield lighting cable splicer shall be qualified in making airport cable splices and terminations on cables rated at or above 5,000 volts AC. The Contractor shall submit to the RPR proof of the qualifications of each proposed cable splicer for the airport cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

**108-2.6 Concrete.** Concrete shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures or **per state department of transportation structural concrete with minimum 25% Type F fly ash, and a minimum allowable compressive strength of 4,000 psi (28 MPa).**

**108-2.7 Flowable backfill.** Flowable material used to backfill trenches for power cable trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

**108-2.8 Cable identification tags.** Cable identification tags shall be made from a non-corrosive material with the circuit identification stamped or etched onto the tag. The tags shall be of the type as detailed on the plans.

**108-2.9 Tape.** Electrical tapes shall be Scotch™ Electrical Tapes—Scotch™ 88 (1-1/2 inch (38 mm) wide) and Scotch™ 130C® linerless rubber splicing tape (2-inch (50 mm) wide), as manufactured by the Minnesota Mining and Manufacturing Company (3M™), or an approved equivalent.

**108-2.10 Electrical coating.** Electrical coating shall be Scotchkote™ as manufactured by 3M™, or an approved equivalent.

**108-2.11 Existing circuits.** Whenever the scope of work requires connection to an existing circuit, the existing circuit's insulation resistance shall be tested, in the presence of the RPR. The test shall be performed per this item and prior to any activity that will affect the respective circuit. The Contractor shall record the results on forms acceptable to the RPR. When the work affecting the circuit is complete, the circuit's insulation resistance shall be checked again, in the presence of the RPR. The Contractor shall record the results on forms acceptable to the RPR. The second reading shall be equal to or greater than the first reading or the Contractor shall make the necessary repairs to the existing circuit to bring the second reading above the first reading. All repair costs including a complete replacement of the L-823 connectors, L-830 transformers and L-824 cable, if necessary, shall be borne by the Contractor. All test results shall be submitted in the Operation and Maintenance (O&M) Manual.

**108-2.12 Detectable warning tape.** Plastic, detectable, American Public Works Association (APWA) Red (electrical power lines, cables, conduit and lighting cable) with continuous legend tape shall be polyethylene film with a metalized foil core and shall be 3-6 inches (75-150 mm) wide. Detectable tape is incidental to the respective bid item. Detectable warning tape for communication cables shall be orange. Detectable warning tape color code shall comply with the APWA Uniform Color Code.

## CONSTRUCTION METHODS

**108-3.1 General.** The Contractor shall install the specified cable at the approximate locations indicated on the plans. Unless otherwise shown on the plans, all cable required to cross under pavements expected to carry aircraft loads shall be installed in concrete encased duct banks. Cable shall be run without splices, from fixture to fixture.

Cable connections between lights will be permitted only at the light locations for connecting the underground cable to the primary leads of the individual isolation transformers. The Contractor shall be responsible for providing cable in continuous lengths for home runs or other long cable runs without connections unless otherwise authorized in writing by the RPR or shown on the plans.

In addition to connectors being installed at individual isolation transformers, L-823 cable connectors for maintenance and test points shall be installed at locations shown on the plans. Cable circuit identification markers shall be installed on both sides of the L-823 connectors installed and on both sides of slack loops where a future connector would be installed.

Provide not less than 3 feet (1 m) of cable slack on each side of all connections, isolation transformers, light units, and at points where cable is connected to field equipment. Where provisions must be made for testing or for future above grade connections, provide enough slack to allow the cable to be extended at least one foot (30 cm) vertically above the top of the access structure. This requirement also applies where primary cable passes through empty light bases, junction boxes, and access structures to allow for future connections, or as designated by the RPR.

Primary airfield lighting cables installed shall have cable circuit identification markers attached on both sides of each L-823 connector and on each airport lighting cable entering or leaving cable access points, such as manholes, hand holes, pull boxes, junction boxes, etc. Markers shall be of sufficient length for imprinting the cable circuit identification legend on one line, using letters not less than 1/4 inch (6 mm) in size. The cable circuit identification shall match the circuits noted on the construction plans.

**108-3.2 Installation in duct banks or conduits.** This item includes the installation of the cable in duct banks or conduit per the following paragraphs. The maximum number and voltage ratings of cables installed in each single duct or conduit, and the current-carrying capacity of each cable shall be per the latest version of the National Electric Code, or the code of the local agency or authority having jurisdiction.

The Contractor shall make no connections or splices of any kind in cables installed in conduits or duct banks.

Unless otherwise designated in the plans, where ducts are in tiers, use the lowest ducts to receive the cable first, with spare ducts left in the upper levels. Check duct routes prior to construction to obtain assurance that the shortest routes are selected and that any potential interference is avoided.

Duct banks or conduits shall be installed as a separate item per Item L-110, Airport Underground Electrical Duct Banks and Conduit. The Contractor shall run a mandrel through duct banks or conduit prior to installation of cable to ensure that the duct bank or conduit is open, continuous and clear of debris. The mandrel size shall be compatible with the conduit size. The Contractor shall swab out all conduits/ducts and clean light bases, manholes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed, the light bases and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, light bases, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be re-cleaned at the Contractor's expense. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

The cable shall be installed in a manner that prevents harmful stretching of the conductor, damage to the insulation, or damage to the outer protective covering. The ends of all cables shall be sealed with moisture-seal tape providing moisture-tight mechanical protection with minimum bulk, or alternately, heat shrinkable tubing before pulling into the conduit and it shall be left sealed until connections are made. Where more than one cable is to be installed in a conduit, all cable shall be pulled in the conduit at the same time. The pulling of a cable through duct banks or conduits may be accomplished by hand winch or power winch with the use of cable grips or pulling eyes. Maximum pulling tensions shall not exceed the cable manufacturer's recommendations. A non-hardening cable-pulling lubricant recommended for the type of cable being installed shall be used where required.

The Contractor shall submit the recommended pulling tension values to the RPR prior to any cable installation. If required by the RPR, pulling tension values for cable pulls shall be monitored by a dynamometer in the presence of the RPR. Cable pull tensions shall be recorded by the Contractor and reviewed by the RPR. Cables exceeding the maximum allowable pulling tension values shall be removed and replaced by the Contractor at the Contractor's expense.

The manufacturer's minimum bend radius or NEC requirements (whichever is more restrictive) shall apply. Cable installation, handling and storage shall be per manufacturer's recommendations. During cold weather, particular attention shall be paid to the manufacturer's minimum installation temperature. Cable shall not be installed when the temperature is at or below the manufacturer's minimum installation temperature. At the Contractor's option, the Contractor may submit a plan, for review by the RPR, for heated storage of the cable and maintenance of an acceptable cable temperature during installation when temperatures are below the manufacturer's minimum cable installation temperature.

Cable shall not be dragged across base can or manhole edges, pavement or earth. When cable must be coiled, lay cable out on a canvas tarp or use other appropriate means to prevent abrasion to the cable jacket.

**108-3.3 Installation of direct-buried cable in trenches.** Unless otherwise specified, the Contractor shall not use a cable plow for installing the cable. Cable shall be unreeled uniformly in place alongside or in the trench

and shall be carefully placed along the bottom of the trench. The cable shall not be unreeled and pulled into the trench from one end. Slack cable sufficient to provide strain relief shall be placed in the trench in a series of S curves. Sharp bends or kinks in the cable shall not be permitted.

Where cables must cross over each other, a minimum of 3 inches (75 mm) vertical displacement shall be provided with the topmost cable depth at or below the minimum required depth below finished grade.

**a. Trenching.** Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored. Trenches for cables may be excavated manually or with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of surface is disturbed. Graders shall not be used to excavate the trench with their blades. The bottom surface of trenches shall be essentially smooth and free from coarse aggregate. Unless otherwise specified, cable trenches shall be excavated to a minimum depth of 18 inches (0.5 m) below finished grade per NEC Table 300.5, except as follows:

- When off the airport or crossing under a roadway or driveway, the minimum depth shall be 36 inches (91 cm) unless otherwise specified.
- Minimum cable depth when crossing under a railroad track, shall be 42 inches (1 m) unless otherwise specified.

The Contractor shall excavate all cable trenches to a width not less than 6 inches (150 mm). Unless otherwise specified on the plans, all cables in the same location and running in the same general direction shall be installed in the same trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 inches (75 mm) below the required cable depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch (6.3 mm) sieve. Flowable backfill material may alternatively be used.

Duct bank or conduit markers temporarily removed for trench excavations shall be replaced as required.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

(1) Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred.

(2) Trenching, etc., in cable areas shall then proceed, with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair or replacement.

**b. Backfilling.** After the cable has been installed, the trench shall be backfilled. The first layer of backfill in the trench shall encompass all cables ; be 3 inches (75 mm) deep, loose measurement; and shall be either earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch (6.3 mm) sieve. This layer shall not be compacted. The second layer shall be 5 inches (125 mm) deep, loose measurement, and shall contain no particles that would be retained on a one inch (25.0 mm) sieve. The remaining third and subsequent layers of backfill shall not exceed 8 inches (20 cm) of loose measurement and be excavated or imported material and shall not contain stone or aggregate larger than 4 inches (100 mm) maximum diameter.

The second and subsequent layers shall be thoroughly tamped and compacted to at least the density of the adjacent material. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be backfilled with controlled low strength material (CLSM) in accordance with P-153.

Trenches shall not contain pools of water during backfilling operations. The trench shall be completely backfilled and tamped level with the adjacent surface, except that when turf is to be established over the trench, the backfilling shall be stopped at an appropriate depth consistent with the type of turfing operation to be accommodated. A proper allowance for settlement shall also be provided. Any excess excavated material shall be removed and disposed of per the plans and specifications.

Underground electrical warning (caution) tape shall be installed in the trench above all direct-buried cable. Contractor shall submit a sample of the proposed warning tape for acceptance by the RPR. If not shown on the plans, the warning tape shall be located 6 inches (150 mm) above the direct-buried cable or the counterpoise wire if present. A 3-6 inch (75 - 150 mm) wide polyethylene film detectable tape, with a metalized foil core, shall be installed above all direct buried cable or counterpoise. The tape shall be of the color and have a continuous legend as indicated on the plans. The tape shall be installed 8 inches (200 mm) minimum below finished grade.

**c. Restoration.** Following restoration of all trenching near airport movement surfaces, the Contractor shall visually inspect the area for foreign object debris (FOD) and remove any that is found. Where soil and sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by work shall be restored to its original condition. The restoration shall include the **sodding, fertilizing, liming, seeding, and/or mulching as** as shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. When trenching is through paved areas, restoration shall be equal to existing conditions. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be backfilled with controlled low strength material (CLSM) in accordance with P-153. Restoration shall be considered incidental to the pay item of which it is a component part.

**108-3.4 Cable markers for direct-buried cable.** The location of direct buried circuits shall be marked by a concrete slab marker, 2 feet (60 cm) square and 4-6 inch (10 - 15 cm) thick, extending approximately one inch (25 mm) above the surface. Each cable run from a line of lights and signs to the equipment vault shall be marked at approximately every 200 feet (61 m) along the cable run, with an additional marker at each change of direction of cable run. All other direct-buried cable shall be marked in the same manner. Cable markers shall be installed directly above the cable. The Contractor shall impress the word "CABLE" and directional arrows on each cable marking slab. The letters shall be approximately 4 inches (100 mm) high and 3 inches (75 mm) wide, with width of stroke 1/2 inch (12 mm) and 1/4 inch (6 mm) deep. Stencils shall be used for cable marker lettering; no hand lettering shall be permitted.

At the location of each underground cable connection/splice, except at lighting units, or isolation transformers, a concrete marker slab shall be installed to mark the location of the connection/splice. The Contractor shall impress the word "SPICE" on each slab. The Contractor also shall impress additional circuit identification symbols on each slab as directed by the RPR. All cable markers and splice markers shall be painted international orange. Paint shall be specifically manufactured for uncured exterior concrete. After placement, all cable or splice markers shall be given one coat of high-visibility aviation orange paint as approved by the RPR. Furnishing and installation of cable markers is incidental to the respective cable pay item.

**108-3.5 Splicing.** Connections of the type shown on the plans shall be made by experienced personnel regularly engaged in this type of work and shall be made as follows:

**a. Cast splices.** These shall be made by using crimp connectors for jointing conductors. Molds shall be assembled, and the compound shall be mixed and poured per the manufacturer's instructions and to the satisfaction of the RPR.

**b. Field-attached plug-in splices.** These shall be assembled per the manufacturer's instructions. These splices shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches (38 mm) on each side of the joint (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches (38 mm) on each side of the joint or (3) On connector kits equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

**c. Factory-molded plug-in splices.** These shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) Wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches (38 mm) on each side of the joint. (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches (38 mm) on each side of the joint. or (3) On connector kits so equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

**d. Taped or heat-shrink splices.** A taped splice shall be made in the following manner:

Bring the cables to their final position and cut so that the conductors will butt. Remove insulation and jacket allowing for bare conductor of proper length to fit compression sleeve connector with 1/4 inch (6 mm) of bare conductor on each side of the connector. Prior to splicing, the two ends of the cable insulation shall be penciled using a tool designed specifically for this purpose and for cable size and type. Do not use emery paper on splicing operation since it contains metallic particles. The copper conductors shall be thoroughly cleaned. Join the conductors by inserting them equidistant into the compression connection sleeve. Crimp conductors firmly in place with crimping tool that requires a complete crimp before tool can be removed. Test the crimped connection by pulling on the cable. Scrape the insulation to assure that the entire surface over which the tape will be applied (plus 3 inches (75 mm) on each end) is clean. After scraping, wipe the entire area with a clean lint-free cloth. Do not use solvents.

Apply high-voltage rubber tape one-half lapped over bare conductor. This tape should be tensioned as recommended by the manufacturer. Voids in the connector area may be eliminated by highly elongating the tape, stretching it just short of its breaking point. The manufacturer's recommendation for stretching tape during splicing shall be followed. Always attempt to exactly half-lap to produce a uniform buildup. Continue buildup to 1-1/2 times cable diameter over the body of the splice with ends tapered a distance of approximately one inch (25 mm) over the original jacket. Cover rubber tape with two layers of vinyl pressure-sensitive tape one-half lapped. Do not use glyptol or lacquer over vinyl tape as they react as solvents to the tape. No further cable covering or splice boxes are required.

Heat shrinkable tubing shall be installed following manufacturer's instructions. Direct flame heating shall not be permitted unless recommended by the manufacturer. Cable surfaces within the limits of the heat-shrink application shall be clean and free of contaminants prior to application.

**e. Assembly.** Surfaces of equipment or conductors being terminated or connected shall be prepared in accordance with industry standard practice and manufacturer's recommendations. All surfaces to be connected shall be thoroughly cleaned to remove all dirt, grease, oxides, nonconductive films, or other foreign material. Paints and other nonconductive coatings shall be removed to expose base metal. Clean all surfaces at least 1/4 inch (6.4 mm) beyond all sides of the larger bonded area on all mating surfaces. Use a joint compound suitable for the materials used in the connection. Repair painted/coated surface to original condition after completing the connection.

**108-3.6 Bare counterpoise wire installation for lightning protection and grounding.** If shown on the plans or included in the job specifications, bare solid #6 AWG copper counterpoise wire shall be installed for lightning protection of the underground cables. The RPR shall select one of two methods of lightning protection for the airfield lighting circuit based upon sound engineering practice and lightning strike density.

**a. Equipotential.** The counterpoise size is as shown on the plans. The equipotential method is applicable to all airfield lighting systems; i.e. runway, taxiway, apron – touchdown zone, centerline, edge, threshold and approach lighting systems. The equipotential method is also successfully applied to provide lightning protection for power, signal and communication systems. The light bases, counterpoise, etc – all components - are bonded together and bonded to the vault power system ground loop/electrode.

Counterpoise wire shall be installed in the same trench for the entire length of buried cable, conduits and duct banks that are installed to contain airfield cables. The counterpoise is centered over the cable/conduit/duct to be protected.

The counterpoise conductor shall be installed no less than 8 inches (200 mm) minimum or 12 inches (300 mm) maximum above the raceway or cable to be protected, except as permitted below:

**(1)** The minimum counterpoise conductor height above the raceway or cable to be protected shall be permitted to be adjusted subject to coordination with the airfield lighting and pavement designs.

**(2)** The counterpoise conductor height above the protected raceway(s) or cable(s) shall be calculated to ensure that the raceway or cable is within a 45-degree area of protection, (45 degrees on each side of vertical creating a 90 degree angle).

The counterpoise conductor shall be bonded to each metallic light base, mounting stake, and metallic airfield lighting component.

All metallic airfield lighting components in the field circuit on the output side of the constant current regulator (CCR) or other power source shall be bonded to the airfield lighting counterpoise system.

All components rise and fall at the same potential; with no potential difference, no damaging arcing and no damaging current flow.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Equipotential Method of lightning protection.

Reference FAA STD-019E, Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment, Part 4.1.1.7.

**b. Isolation.** Counterpoise size is as shown on the plans. The isolation method is an alternate method for use only with edge lights installed in turf and stabilized soils and raceways installed parallel to and adjacent to the edge of the pavement. NFPA 780 uses 15 feet to define “adjacent to”.

The counterpoise conductor shall be installed halfway between the pavement edge and the light base, mounting stake, raceway, or cable being protected.

The counterpoise conductor shall be installed 8 inches (203 mm) minimum below grade. The counterpoise is not connected to the light base or mounting stake. An additional grounding electrode is required at each light base or mounting stake. The grounding electrode is bonded to the light base or mounting stake with a 6 AWG solid copper conductor.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Isolation Method of lightning protection.

**c. Common Installation requirements.** When a metallic light base is used, the grounding electrode shall be bonded to the metallic light base or mounting stake with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

When a nonmetallic light base is used, the grounding electrode shall be bonded to the metallic light fixture or metallic base plate with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

Grounding electrodes may be rods, ground dissipation plates, radials, or other electrodes listed in the NFPA 70 (NEC) or NFPA 780.

Where raceway is installed by the directional bore, jack and bore, or other drilling method, the counterpoise conductor shall be permitted to be installed concurrently with the directional bore, jack and bore, or other drilling method raceway, external to the raceway or sleeve.

The counterpoise wire shall also be exothermically welded to ground rods installed as shown on the plans but not more than 500 feet (150 m) apart around the entire circuit. The counterpoise system shall be continuous and terminate at the transformer vault or at the power source. It shall be securely attached to the vault or equipment external ground ring or other made electrode-grounding system. The connections shall be made as shown on the plans and in the specifications.

Where an existing airfield lighting system is being extended or modified, the new counterpoise conductors shall be interconnected to existing counterpoise conductors at each intersection of the new and existing airfield lighting counterpoise systems.

**d. Parallel Voltage Systems.** Provide grounding and bonding in accordance with NFPA 70, National Electrical Code.

**108-3.7 Counterpoise installation above multiple conduits and duct banks.** Counterpoise wires shall be installed above multiple conduits/duct banks for airfield lighting cables, with the intent being to provide a complete area of protection over the airfield lighting cables. When multiple conduits and/or duct banks for airfield cable are installed in the same trench, the number and location of counterpoise wires above the conduits shall be adequate to provide a complete area of protection measured 45 degrees each side of vertical.

Where duct banks pass under pavement to be constructed in the project, the counterpoise shall be placed above the duct bank. Reference details on the construction plans.

**108-3.8 Counterpoise installation at existing duct banks.** When airfield lighting cables are indicated on the plans to be routed through existing duct banks, the new counterpoise wiring shall be terminated at ground rods at each end of the existing duct bank where the cables being protected enter and exit the duct bank. The new counterpoise conductor shall be bonded to the existing counterpoise system.

**108-3.9 Exothermic bonding.** Bonding of counterpoise wire shall be by the exothermic welding process or equivalent method accepted by the RPR. Only personnel experienced in and regularly engaged in this type of work shall make these connections.

Contractor shall demonstrate to the satisfaction of the RPR, the welding kits, materials and procedures to be used for welded connections prior to any installations in the field. The installations shall comply with the manufacturer's recommendations and the following:

**a.** All slag shall be removed from welds.

**b.** Using an exothermic weld to bond the counterpoise to a lug on a galvanized light base is not recommended unless the base has been specially modified. Consult the manufacturer's installation



directions for proper methods of bonding copper wire to the light base. See AC 150/5340-30 for galvanized light base exception.

c. If called for in the plans, all buried copper and weld material at weld connections shall be thoroughly coated with 6 mm of 3M™ Scotchkote™, or approved equivalent, or coated with coal tar Bitumastic® material to prevent surface exposure to corrosive soil or moisture.

**108-3.10 Testing.** The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits before and after installation. The Contractor shall perform all tests in the presence of the RPR. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the RPR. All costs for testing are incidental to the respective item being tested. For phased projects, the tests must be completed by phase. The Contractor must maintain the test results throughout the entire project as well as during the warranty period that meet the following:

a. Earth resistance testing methods shall be submitted to the RPR for approval. Earth resistance testing results shall be recorded on an approved form and testing shall be performed in the presence of the RPR. All such testing shall be at the sole expense of the Contractor.

b. Should the counterpoise or ground grid conductors be damaged or suspected of being damaged by construction activities the Contractor shall test the conductors for continuity with a low resistance ohmmeter. The conductors shall be isolated such that no parallel path exists and tested for continuity. The RPR shall approve of the test method selected. All such testing shall be at the sole expense of the Contractor.

After installation, the Contractor shall test and demonstrate to the satisfaction of the RPR the following:

c. That all affected lighting power and control circuits (existing and new) are continuous and free from short circuits.

d. That all affected circuits (existing and new) are free from unspecified grounds.

e. That the insulation resistance to ground of all new non-grounded high voltage series circuits or cable segments is not less than **50** megohms. Verify continuity of all series airfield lighting circuits prior to energization.

f. That the insulation resistance to ground of all new non-grounded conductors of new multiple circuits or circuit segments is not less than 100 megohms.

g. That all affected circuits (existing and new) are properly connected per applicable wiring diagrams.

h. That all affected circuits (existing and new) are operable. Tests shall be conducted that include operating each control not less than 10 times and the continuous operation of each lighting and power circuit for not less than 1/2 hour.

i. That the impedance to ground of each ground rod does not exceed **25** ohms prior to establishing connections to other ground electrodes. The fall-of-potential ground impedance test shall be used, as described by American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81, to verify this requirement. As an alternate, clamp-on style ground impedance test meters may be used to satisfy the impedance testing requirement. Test equipment and its calibration sheets shall be submitted for review and approval by the RPR prior to performing the testing.

Two copies of tabulated results of all cable tests performed shall be supplied by the Contractor to the RPR. Where connecting new cable to existing cable, insulation resistance tests shall be performed on the new cable prior to connection to the existing circuit.

There are no approved "repair" procedures for items that have failed testing other than complete replacement.

#### METHOD OF MEASUREMENT

**108-4.1** Trenching shall be measured by the linear feet (meters) of trench, including the excavation, backfill, and restoration, completed, measured as excavated, and accepted as satisfactory. When specified, separate measurement shall be made for trenches of various specified widths.

The cost of all excavation, backfill, dewatering and restoration regardless of the type of material encountered shall be included in the unit price bid for the work.

**108-4.2** Cable or counterpoise wire installed in trench, duct bank or conduit shall be measured by the number of linear feet (meters) installed and grounding connectors, and trench marking tape ready for operation, and accepted as satisfactory. Separate measurement shall be made for each cable or counterpoise wire installed in trench, duct bank or conduit. The measurement for this item **shall not** include additional quantities required for slack. **Cable and counterpoise slack is considered incidental to this item and is included in the Contractor's unit price. No separate measurement or payment will be made for cable or counterpoise slack.**

**108-4.3** No separate payment will be made for ground rods.

#### BASIS OF PAYMENT

**108-5.1** Payment will be made at the contract unit price for trenching, cable and bare counterpoise wire installed in trench (direct-buried), or cable and equipment ground installed in duct bank or conduit, in place by the Contractor and accepted by the RPR. This price shall be full compensation for furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals, including ground rods and ground connectors and trench marking tape, necessary to complete this item.

Payment will be made under:

- Item L-108-5.1 Trenching for direct-buried cable or conduit, 18-inch minimum depth - per linear foot (meter)
- Item L-108-5.2 Trenching for Duct Bank, 30" minimum depth per linear foot
- Item L-108-5.3 No. 8 AWG, 5 kV, L-824, Type C Cable, Installed in Trench, Duct Bank or Conduit - per linear foot (meter)
- Item L-108-5.4 No. 6 AWG, Solid, Bare Copper Counterpoise Wire, Installed in Trench **or** Above the Duct Bank or Conduit, Including Connections/Terminations - per linear foot (meter)

#### REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

## Advisory Circulars (AC)

AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-53	Airport Lighting Equipment Certification Program

## Commercial Item Description

A-A-59544A	Cable and Wire, Electrical (Power, Fixed Installation)
A-A-55809	Insulation Tape, Electrical, Pressure-Sensitive Adhesive, Plastic

## ASTM International (ASTM)

ASTM B3	Standard Specification for Soft or Annealed Copper Wire
ASTM B8	Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM B33	Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes
ASTM D4388	Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes

## Mil Spec

MIL-PRF-23586F	Performance Specification: Sealing Compound (with Accelerator), Silicone Rubber, Electrical
MIL-I-24391	Insulation Tape, Electrical, Plastic, Pressure Sensitive

## National Fire Protection Association (NFPA)

NFPA-70	National Electrical Code (NEC)
NFPA-780	Standard for the Installation of Lightning Protection Systems

## American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE)

ANSI/IEEE STD 81	IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
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## Federal Aviation Administration Standard

FAA STD-019E	Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment
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**END OF ITEM L-108**

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## **Item L-109 Airport Transformer Vault and Vault Equipment**

### **DESCRIPTION**

**109-1.1** This item shall consist of removing an existing airport transformer vault and equipment and; constructing an airport transformer vault or a prefabricated metal housing per these specifications and per the design and dimensions shown in the plans. This work shall also include the installation of conduits in the floor and foundation, painting and lighting of the vault or metal housing, and the furnishing of all incidentals that are necessary to produce a completed unit. Included as a separate part under this item or as a separate item where an existing vault is to be used shall be the furnishing of all vault equipment, wiring, electrical buses, cable, conduit, potheads, and grounding systems. This work shall also include the painting of equipment and conduit; the marking and labeling of equipment and the labeling or tagging of wires; the testing of the installation; and the furnishing of all incidentals necessary to place it in operating condition as a completed unit to the satisfaction of the RPR.

### **EQUIPMENT AND MATERIALS**

#### **109-2.1 General.**

**a.** Airport lighting equipment and materials covered by advisory circulars (AC) shall be certified in AC 150/5345-53, Airport Lighting Equipment Certification Program (ALECP) and listed in the ALECP Addendum.

**b.** All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

**c.** Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

**d.** All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

**e.** The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be provided in electronic pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

### **CONSTRUCTION OF VAULT AND PREFABRICATED METAL HOUSING**

**109-3.1 Electrical vault building.** The electrical vault building must comply with NEC Article 110.31, Enclosure for Electrical Installations, Item (A) Electrical Vaults. Construct the building of materials having adequate structural strength for the conditions and installed location, has a minimum fire rating of two or three hours as determined by the authority having jurisdiction (AHJ), and is bullet resistant to minimum UL 752 Level 4.

**109-3.2 Concrete.** Concrete shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures or **per state department of transportation structural concrete with minimum 25% Type F fly ash, and a minimum allowable compressive strength of 4,000 psi (28 MPa).**

**109-3.3 Precast concrete structures.** Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another RPR approved third party certification program. Precast concrete structures shall conform to ASTM C478.

**109-3.4 Reinforcing steel.** Reinforcing steel bars shall be intermediate or structural grade deformed-type bars and shall be per ASTM A615.

**109-3.5 Brick.** Brick shall be per ASTM C62, Grade SW.

**109-3.6 Rigid steel conduit.** Rigid steel conduit and fittings shall be per Underwriters Laboratories Standards 6 and 514B.

**109-3.7 Plastic Conduit and fittings.** Plastic Conduit and fittings shall conform to the requirements of UL-651 and UL-654 schedule 40 polyvinyl chloride (PVC) suitable for use above or below ground.

**109-3.8 Lighting.** Vault or metal-housing light fixtures shall be of a vapor-proof type.

**109-3.9 Outlets.** Convenience outlets shall be heavy-duty duplex units designed for industrial service.

**109-3.10 Switches.** Vault or metal-housing light switches shall be single-pole switches.

**109-3.11 Paint.**

a. Priming paint for non-galvanized metal surfaces shall be a high solids alkyd primer compatible with the manufacturer's recommendations for the intermediate or topcoat.

b. White paint for body and finish coats on metal and wood surfaces shall be ready-mixed paint conforming to the Master Painter's Institute (MPI), Reference #9, Exterior Alkyd, Gloss.

c. Priming paint for wood surfaces shall be mixed on the job by thinning the specified white paint by adding 1/2 pint (0.24 liter) of raw linseed oil to each gallon (liter).

d. Paint for the floor, ceiling, and inside walls shall be per Porter Paint Company 69, 71, and 79 or equivalent. Walls and ceiling shall be light gray and the floor shall be medium gray.

e. The roof coating shall be hot asphalt material per ASTM D2823. Asbestos-free roof coating per ASTM D4479 may be substituted if required by local codes.

**109-3.12 Ground bus.** Ground bus shall be 1/8 × 3/4 inch (3 × 19 mm) minimum copper bus bar.

**109-3.13 Square duct.** Duct shall be square similar to that manufactured by the Square D Company (or equivalent), or the Trumbull Electric Manufacturing Company (or equivalent). The entire front of the duct on each section shall consist of hinged or removable cover for ready access to the interior. The cross-section of the duct shall be not less than 4 × 4 inch (100 × 100 mm) except where otherwise shown in the plans.

**109-3.14 Ground rods.** Ground rods shall be in accordance with Item L-108.

**109-3.15 Vault prefabricated metal housing.** The prefabricated metal housing shall be a commercially available unit.

**109-3.16 FAA-approved equipment.** Certain items of airport lighting equipment installed in vaults are covered by individual ACs listed below:

AC 150/5345-3 Specification for L-821, Panels for Remote Control of Airport Lighting

AC 150/5345-5 Circuit Selector Switch

AC 150/5345-7 Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits

AC 150/5345-10 Specification for Constant Current Regulators and Regulator Monitors

AC 150/5345-13 Specification for L-841 Auxiliary Relay Cabinet Assembly for Pilot Control of Airport Lighting Circuits.

AC 150/5345-49 Specification for L-854, Radio Control Equipment

AC 150/5345-56 Specification for L-890 Airport Lighting Control and Monitoring System (ALCMS)

**109-3.17 Other electrical equipment.** Distribution transformers, oil switches, cutouts, relays, terminal blocks, transfer relays, circuit breakers, and all other regularly used commercial items of electrical equipment not covered by FAA equipment specifications and ACs shall conform to the applicable rulings and standards of the Institute of Electrical and Electronic Engineers (IEEE) or the National Electrical Manufacturers Association (NEMA). When specified, test reports from a testing laboratory indicating that the equipment meets the specifications shall be supplied. In all cases, equipment shall be new and a first-grade product. This equipment shall be supplied in the quantities required for the specific project and shall incorporate the electrical and mechanical characteristics specified in the proposal and plans. Equipment selected and installed by the Contractor shall maintain the interrupting current rating of the existing systems or specified rating whichever is greater.

**109-3.18 Wire.** Wire (in conduit) rated up to 5,000 volts shall be per AC 150/5345-7, Specification for L-824 Underground Electrical Cables for Airport Lighting Circuits. For ratings up to 600 volts, moisture and heat resistant thermoplastic wire conforming to Commercial Item Description A-A-59544A Type THWN-2 shall be used. The wires shall be of the type, size, number of conductors, and voltage shown in the plans or in the proposal.

**a. Control circuits.** Unless otherwise indicated on the plans, wire shall be not less than No. 12 American wire gauge (AWG) and shall be insulated for 600 volts. If telephone control cable is specified, No. 19 AWG telephone cable per ANSI/Insulated Cable Engineers Association (ICEA) S-85-625 specifications shall be used.

**b. Power circuits.**

(1) 600 volts maximum – Wire shall be No. 6 AWG or larger and insulated for at least 600 volts.

(2) 3,000 volts maximum – Wire shall be No. 6 AWG or larger and insulated for at least 3,000 volts.

(3) Over 3,000 volts-Wire shall be No. 6 AWG or larger and insulated for at least the circuit voltage.

**109-3.19 Short circuit / coordination / device evaluation / arc flash analysis.** The Contractor shall, based upon the equipment provided, include as a part of the submittal process the electrical system “Short Circuit / Coordination / Device evaluation / Arc Flash Analysis”. The analysis shall be performed by the equipment manufacturer and submitted in a written report. The analysis shall be signed and sealed by a registered professional Engineer from the state in which the project is located. The analysis shall comply with NFPA-70E and IEEE 1584.

The analysis will include: one line diagrams, short circuit analysis, coordination analysis, equipment evaluation, arc flash analysis and arc flash labels containing at a minimum, equipment name, voltage/current rating, available incident energy and flash protection boundary.

The selected firms field service Engineer shall perform data gathering for analysis completion and device settings, perform device setting as recommended by the analysis and will furnish and install the arc flash labels. The components worst case incident energy will be considered the available arc flash energy at that specific point in the system. Submit three written copies and one electronic copy of the report.

## CONSTRUCTION METHODS

### CONSTRUCTION OF VAULT AND PREFABRICATED METAL HOUSING

**109-4.1 General.** The Contractor shall construct the transformer vault or prefabricated metal housing at the location indicated in the plans. Vault construction shall be reinforced concrete, concrete masonry, or brick wall as specified. The metal housing shall be prefabricated equipment enclosure to be supplied in the size specified. The mounting pad or floor details, installation methods, and equipment placement are shown in the plans. Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another engineer approved third party certification program.

The Contractor shall clear, grade, and seed the area around the vault or metal housing for a minimum distance of 10 feet (3 m) on all sides. The slope shall be not less than 1/2 inch per foot (12 mm per 0.3 m) away from the vault or metal housing in all directions.

The vault shall provide adequate protection against weather elements, including rain, wind-driven dust, snow, ice and excessive heat. The vault shall have sufficient filtered ventilation, to assure that the interior room temperatures and conditions do not exceed the recommended limits of the electrical equipment to be installed in the vault. The Contractor is responsible for contacting the manufacturer of the equipment to be installed to obtain environmental limitations of the equipment to be installed. Refer to the electrical vault detail plan sheets for construction requirements. The prefabricated building shall include roof, walls and floor in accordance with the details and these specifications.

#### 109-4.2 Foundation and walls.

**a. Reinforced concrete construction.** The Contractor shall construct the foundation and walls per the details shown in the plans. Unless otherwise specified, internal ties shall be of the mechanical type so that when the forms are removed the ends of the ties shall be at least one inch (25 mm) beneath the concrete surface; the holes shall be plugged and finished to prevent discoloration. Reinforcing steel shall be placed, as shown in the drawings, and secured in position to prevent displacement during the concrete placement.



The external surfaces of the concrete shall be thoroughly worked during the placing operation to force all coarse aggregate from the surface. Thoroughly work the mortar against the forms to produce a smooth finish free from air pockets and honeycomb.

The surface film of all pointed surfaces shall be removed before setting occurs. As soon as the pointing has set sufficiently, the entire surface inside and outside of the vault shall be thoroughly wet with water and rubbed with a No. 16 carborundum stone, or equivalent quality abrasive, bringing the surface to a paste. All form marks and projections shall be removed. The surface produced shall be smooth and dense without pits or irregularities. The materials which have been ground into a paste during the rubbing process shall be spread or brushed uniformly over the entire surface (except the interior surfaces that are to be painted shall have all paste removed by washing before painting) and permitted to reset. Final exterior finish shall be obtained by rubbing with No. 30 carborundum stone, or an equivalent quality abrasive. The surface shall be rubbed until the entire surface is smooth and uniform in color.

**b. Brick and concrete construction.** When this type of construction is specified, the foundation shall be concrete conforming to the details shown in the plans. The outer edge of the foundation at the floor level shall be beveled 1-1/2 inches (38 mm) at 45 degrees. Brick walls shall be 8 inches (200 mm) thick, laid in running bond with every sixth course a header course. Brick shall be laid in cement mortar (one part masonry cement and 3 parts sand) with full mortar bed and shoved joints. All joints shall be completely filled with mortar, and facing brick shall be back-parged with mortar as work progresses. All joints shall be 3/8 inch (9 mm) thick, exterior joints tooled concave, and interior joints struck flush. Both interior and exterior brick surfaces shall be cleaned and nail holes, cracks and other defects filled with mortar. When specified, a nonfading mineral pigment mortar coloring shall be added to the mortar. Steel reinforcing bars, 3/8 inch (9 mm) in diameter and 12 inches (300 mm) long, shall be set vertically in the center of the brick wall on not more than 2 feet (60 cm) centers to project 2-1/2 inches (60 mm) into the concrete roof slab. Lintels for supporting the brickwork over doors, windows, and louvers shall consist of two 4 × 3 × 3/8 inch (100 × 75 × 9 mm) steel angles. Lintels shall be painted with one coat of corrosion-inhibiting primer before installation, and all exposed parts shall be painted similar to doors and window sash after installation.

Window sills may be concrete poured in place or precast concrete as indicated in the plans. All exposed surfaces shall have a rubbed finish as specified under reinforced concrete construction. After completion, all interior and exterior faces of walls shall be scrubbed with a solution of muriatic acid and water in the proportions of not less than one part acid to 10 parts of water. All traces of efflorescence, loose mortar, and mortar stain shall be removed, and the walls washed down with clear water.

**c. Concrete masonry construction.** When this type of construction is specified, the foundation shall be concrete conforming to the details shown in the plans. The concrete masonry units shall be standard sizes and shapes and shall conform to ASTM C90 and shall include the closures, jambs, and other shapes required by the construction as shown in the plans. Standard construction practice shall be followed for this type of work including mortar, joints, reinforcing steel for extensions into roof slab, etc. Plaster for interior walls, if specified, shall be Portland cement plaster.

**109-4.3 Roof.** The roof shall be reinforced concrete as shown in the plans. Reinforcing steel shall be placed as shown in the drawing and secured in position to prevent displacement during the pouring of the concrete. The concrete shall be poured monolithically and shall be free of honeycombs and voids. The surface shall have a steel-troweled finish and shall be sloped as shown in the drawing. The underside of the roof slab shall be finished in the same manner as specified for walls.

One brush or mop coat of hot asphalt roof coating shall be applied to the top surface of the roof slab. The asphalt material shall be heated to within the range specified by the manufacturer and immediately applied

to the roof. The finished coat shall be continuous over the roof surface and free from holidays and blisters. Smears and dribbles of asphalt on the roof edges and building walls shall be removed.

**109-4.4 Floor.** Construct building foundation in accordance with the details shown in the plans. The floor shall be reinforced concrete as shown in the drawings. When present, all sod, roots, refuse, and other perishable material shall be removed from the area under the floor to a depth of 8 inches (200 mm), unless a greater depth is specified in the invitation for bids. This area shall be backfilled with materials consisting of sand, cinders, gravel, or stone. Fill shall be placed in layers not to exceed 4 inches (100 mm) and shall be thoroughly compacted by tamping or rolling. A layer of building paper shall be placed over the fill prior to placing concrete. The floor surfaces shall have a steel-troweled finish. The floor shall be level unless a drain is specified, in which case the floor shall be pitched 1/4 inch (6 mm) per foot downward toward the drain. A 1/4-inch (6-mm) asphalt felt expansion joint shall be placed between floor and foundation walls. The floor shall be poured monolithically and shall be free of honeycombs and voids.

**109-4.5 Floor drain.** If shown in the plans, a floor drain and dry well shall be installed in the center of the floor of the equipment room. The dry well shall be excavated 4 × 4 feet (1.2 × 1.2 m) square and to a depth of 4 feet (1.2 m) below the finished floor elevation and shall be backfilled to the elevation of the underside of the floor with gravel - which shall all pass a 2-inch (50 mm) mesh sieve and shall all be retained on a 1/4-inch (6.3 mm) mesh sieve. The gravel backfill shall be placed in 6 inch (150 mm) maximum layers, and the entire surface of each layer shall be tamped either with a mechanical tamper or with a hand tamper weighing not less than 25 pounds (11 kg) and having a face area of not more than 36 square inches (232 square cm) nor less than 16 square inches (103 square cm). The drain inlet shall be set flush in the concrete floor. The drain shall have a clear opening of not less than 8 inches (200 mm) in diameter.

**109-4.6 Conduits in floor and foundation.** Conduits shall be installed in the floor and through the foundation walls per the details shown in the plans. All underground conduit shall be painted with an asphalt compound. Conduit shall be installed with a coupling or metal conduit adapter flush with the top of the floor. All incoming conduit shall be closed with a pipe plug to prevent the entrance of foreign material during construction. Space conduit entrances shall be left closed.

**109-4.7 Doors.** Doors shall be metal-clad fireproof Class A (three (3) hour rated) doors conforming to requirements of the National Electrical Code (NEC) and local electrical codes. Panic bar exit hardware shall be installed per NEC requirements. Refer to the new electrical vault detail plan sheets for construction requirements.

**109-4.8 Painting.** The floor, ceiling, and inside walls of concrete construction shall first be given a hardening treatment, after which the Contractor shall apply two coats of paint as specified below, except that interior face brick walls need not be painted. The hardening treatment shall consist of applying two coats of either a commercial floor hardener or a solution made by dissolving 2 pounds (0.9 kg) of magnesium fluorosilicate or zinc sulfate crystals in one gallon (liter) of water. Each coat shall be allowed to dry at least 48 hours before the next application. After the second treating coat has dried, the surfaces shall be brushed clean of all crystals and thoroughly washed with clear water. Paint for walls and ceiling shall be a light gray color approved by the RPR. The floor paint shall be a medium gray color approved by the RPR. Before painting, the surfaces shall be dry and clean. The first coat shall be thinned by adding 2/3-quart (0.63 liters) of spar varnish and 1/3-quart (0.31 liters) of turpentine to each gallon (liter) of paint. The second coat shall be applied without thinning. All doors, lintels, and windows shall be cleaned to remove any rust or foreign material and shall be given one body and one finish coat of white paint. Bare metal surfaces shall be given a prime coat of corrosion-inhibiting primer prior to the body and finish coats.

**109-4.9 Lights and switches.** The Contractor shall furnish and install a minimum of two duplex convenience outlets in the vault room. Where a control room is specified, at least two duplex outlets shall be installed.

## INSTALLATION OF EQUIPMENT IN VAULT OR PREFABRICATED METAL HOUSING

**109-5.1 General.** The Contractor shall furnish, install, and connect all equipment, equipment accessories, conduit, cables, wires, buses, grounds, and support necessary to ensure a complete and operable electrical distribution center for the airport lighting system as specified herein and shown in the plans. When specified, an emergency power supply and transfer switch shall be provided and installed.

The equipment installation and mounting shall comply with the requirements of the National Electrical Code and local code agency having jurisdiction. All electrical work shall comply with the NEC and local code agency having jurisdiction including the separation of under 600V work from 5,000V work."

**109-5.2 Power supply equipment.** Transformers, regulators, booster transformers, and other power supply equipment items shall be furnished and installed at the location shown in the plans or as directed by the RPR. The power supply equipment shall be set on steel "H" sections, "I" beams, channels, or concrete blocks to provide a minimum space of 1-1/2 inch (38 mm) between the equipment and the floor. The equipment shall be placed so as not to obstruct the oil-sampling plugs of the oil-filled units; and name-plates shall, so far as possible, not be obscured.

If specified in the plans and specifications, equipment for an alternate power source or an emergency power generator shall be furnished and installed. The alternate power supply installation shall include all equipment, accessories, an automatic changeover switch, and all necessary wiring and connections. The emergency power generator set shall be the size and type specified.

**109-5.3 Switchgear and panels.** Oil switches, fused cutouts, relays, transfer switches, panels, panel boards, and other similar items shall be furnished and installed at the location shown in the plans or as directed by the RPR. Wall or ceiling mounted items shall be attached to the wall or ceiling with galvanized bolts of not less than 3/8-inch (9 mm) diameter engaging metal expansion shields or anchors in masonry or concrete vaults.

**109-5.4 Duct and conduit.** The Contractor shall furnish and install square-type exposed metallic ducts with hinged covers for the control circuits in the vault. These shall be mounted along the walls behind all floor-mounted equipment and immediately below all wall-mounted equipment. The hinged covers shall be placed to open from the front side with the hinges at the front bottom.

Wall brackets for square ducts shall be installed at all joints 2 feet (60 cm) or more apart with intermediate brackets as specified. Conduit shall be used between square ducts and equipment or between different items of equipment when the equipment is designed for conduit connection. When the equipment is not designed for conduit connection, conductors shall enter the square-type control duct through insulating bushings in the duct or on the conduit risers.

**109-5.5 Wiring and connections.** The Contractor shall make all necessary electrical connections in the vault per the wiring diagrams furnished and as directed by the RPR. In wiring to the terminal blocks, the Contractor shall leave sufficient extra length on each control lead to make future changes in connections at the terminal block. This shall be accomplished by running each control lead the longest way around the box to the proper terminal. Leads shall be neatly laced in place.

**109-5.6 Marking and labeling.** All equipment, control wires, terminal blocks, etc., shall be tagged, marked, or labeled as specified below:

**a. Wire identification.** The Contractor shall furnish and install self-sticking wire labels or identifying tags on all control wires at the point where they connect to the control equipment or to the terminal blocks. Wire labels, if used, shall be of the self-sticking preprinted type and of the manufacturer's recommended size for the wire involved. Identification -markings designated in the plans shall be followed. Tags, if used,

shall be of fiber not less than 3/4 inch (19 mm) in diameter and not less than 1/32 inch (1 mm) thick. Identification markings designated in the plans shall be stamped on tags by means of small tool dies. Each tag shall be securely tied to the proper wire by a nonmetallic cord.

**b. Labels.** The Contractor shall stencil identifying labels on the cases of regulators, breakers, and distribution and control relay cases with white oil paint as designated by the RPR. The letters and numerals shall be not less than one inch (25 mm) in height and shall be of proportionate width. The Contractor shall also mark the correct circuit designations per the wiring diagram on the terminal marking strips, which are a part of each terminal block.

### METHOD OF MEASUREMENT

**109-6.1** The quantity of vaults to be paid for under this item shall consist of the number of vaults constructed in place and accepted as a complete unit.

**109-6.2** The quantity of prefabricated metal housings to be paid for under this item shall consist of the number of housings constructed in place and accepted as a complete unit.

**109-6.3** The quantity of equipment to be paid for under this item shall consist of all equipment installed, connected and accepted as a complete unit ready for operation within an existing vault or prefabricated metal housing.

### BASIS OF PAYMENT

**109-7.1** Payment will be made at the contract unit price for each completed and accepted vault or prefabricated metal housing equipment installation. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

- Item L-109-7.1 Removal and Disposal of L-828 Constant Current Regulator within Existing Electrical Vault, in Place - per unit
- Item L-109-7.2 Removal and disposal of Electric Panelboard within Existing Electrical Vault, in Place - per unit
- Item L-109-7.3 Removal and disposal of Control Panel within Existing Electrical Vault, in Place - per unit
- Item L-109-7.4 Removal and disposal of L-854 Radio Control Receiver within Existing Electrical Vault, in Place - per unit
- Item L-109-7.5 Installation of L-828 10 kW, 5 step Runway Constant Current Regulator within Existing Electrical Vault, in Place - per unit
- Item L-109-7.6 Installation of L-828 7.5 kW, 3 step Taxiway Constant Current Regulator within Existing Electrical Vault, in Place - per unit
- Item L-109-7.7 Installation of L-828 4 kW, 5-Step PAPI Constant Current Regulator within Existing Electrical Vault, in Place - per unit
- Item L-109-7.8 Installation of 225A Panelboard with Main Breaker within Existing Electrical Vault, in Place - per unit

Item L-109-7.9 Installation of L-821 Control Panel within Existing Electrical Vault, in Place - per unit

Item L-109-7.10 Installation of L-854 Radio Control Receiver in existing vault, in Place - per unit

Item L-109-7.11 Supply and Install 60"W X 18"D X 72" H Steel Shelving Unit (Anchored to Wall) – per lump sum

## REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

### Advisory Circulars (AC)

AC 150/5340-30 Design and Installation Details for Airport Visual Aids

AC 150/5345-3 Specification for L-821, Panels for Remote Control of Airport Lighting

AC 150/5345-5 Circuit Selector Switch

AC 150/5345-7 Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits

AC 150/5345-10 Specification for Constant Current Regulators and Regulator Monitors

AC 150/5345-13 Specification for L-841 Auxiliary Relay Cabinet Assembly for Pilot Control of Airport Lighting Circuits

AC 150/5345-49 Specification L-854, Radio Control Equipment;

AC 150/5345-53 Airport Lighting Equipment Certification Program

### American National Standards Institute / Insulated Cable Engineers Association (ANSI/ICEA)

ANSI/ICEA S-85-625 Standard for Telecommunications Cable Aircore, Polyolefin Insulated, Copper Conductor Technical Requirements

### ASTM International (ASTM)

ASTM A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

ASTM C62 Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)

ASTM C90 Standard Specification for Loadbearing Concrete Masonry Units

ASTM D2823 Standard Specification for Asphalt Roof Coatings, Asbestos Containing

ASTM D4479 Standard Specification for Asphalt Roof Coatings – Asbestos-Free

### Commercial Item Description (CID)

A-A 59544 Cable and Wire, Electrical (Power, Fixed Installation)  
Institute of Electrical and Electronic Engineers (IEEE)

IEEE 1584 Guide for Performing Arc-Flash Hazard Calculations

## Master Painter's Institute (MPI)

MPI Reference #9 Alkyd, Exterior, Gloss (MPI Gloss Level 6)

## Underwriters Laboratories (UL)

UL Standard 6 Electrical Rigid Metal Conduit – Steel

UL Standard 514B Conduit, Tubing, and Cable Fittings

UL Standard 514C Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers

UL Standard 651 Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings

UL Standard 651A Type EB and A Rigid PVC Conduit and HDPE Conduit

## National Fire Protection Association (NFPA)

NFPA-70 National Electrical Code (NEC)

NFPA-70E Standard for Electrical Safety in the Workplace

NFPA-780 Standard for the Installation of Lightning Protection Systems

**END OF ITEM L-109**

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## **Item L-110 Airport Underground Electrical Duct Banks and Conduits**

### **DESCRIPTION**

**110-1.1** This item shall consist of underground electrical conduits and duct banks (single or multiple conduits encased in concrete or buried in sand) installed per this specification at the locations and per the dimensions, designs, and details shown on the plans. This item shall include furnishing and installing of all underground electrical duct banks and individual and multiple underground conduits. It shall also include all turbing trenching, backfilling, removal, and restoration of any paved or turfed areas; concrete encasement, mandrelling, pulling lines, duct markers, plugging of conduits, and the testing of the installation as a completed system ready for installation of cables per the plans and specifications. This item shall also include furnishing and installing conduits and all incidentals for providing positive drainage of the system. Verification of existing ducts is incidental to the pay items provided in this specification.

### **EQUIPMENT AND MATERIALS**

#### **110-2.1 General.**

**a.** All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

**b.** Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, that comply with these specifications, at the Contractor's cost.

**c.** All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in project that accrue directly or indirectly from late submissions or resubmissions of submittals.

**d.** The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes specified in this document.

**e.** All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.



**110-2.2 Steel conduit.** Rigid galvanized steel (RGS) conduit and fittings shall be hot dipped galvanized inside and out and conform to the requirements of Underwriters Laboratories Standards 6, 514B, and 1242. All RGS conduits or RGS elbows installed below grade, in concrete, permanently wet locations or other similar environments shall be painted with a 10-mil thick coat of asphaltum sealer or shall have a factory-bonded polyvinyl chloride (PVC) cover. Any exposed galvanizing or steel shall be coated with 10 mils of asphaltum sealer. When using PVC coated RGS conduit, care shall be exercised not to damage the factory PVC coating. Damaged PVC coating shall be repaired per the manufacturer's written instructions. In lieu of PVC coated RGS, corrosion wrap tape shall be permitted to be used where RGS is in contact with direct earth."

**110-2.3 Plastic conduit.** Plastic conduit and fittings shall conform to the following requirements:

- UL 514B covers W-C-1094-Conduit fittings all types, classes 1 thru 3 and 6 thru 10. [SEP]
- UL 514C covers W-C-1094- all types, Class 5 junction box and cover in plastic (PVC).
- UL 651 covers W-C-1094-Rigid PVC Conduit, types I and II, Class 4.
- UL 651A covers W-C-1094-Rigid PVC Conduit and high-density polyethylene (HDPE) Conduit type III and Class 4.

Underwriters Laboratories Standards UL-651 and Article 352 of the current National Electrical Code shall be one of the following, as shown on the plans:

- a. Type I—Schedule 40 and Schedule 80 PVC suitable for underground use either direct-buried or encased in concrete.
- b. Type II—Schedule 40 PVC suitable for either above ground or underground use.
- c. Type III – Schedule 80 PVC suitable for either above ground or underground use either direct-buried or encased in concrete.
- d. Type III –HDPE pipe, minimum standard dimensional ratio (SDR) 11, suitable for placement with directional boring under pavement.

The type of solvent cement shall be as recommended by the conduit/fitting manufacturer.

**110-2.4 Split conduit.** Split conduit shall be pre-manufactured for the intended purpose and shall be made of steel or plastic.

**110-2.5 Conduit spacers.** Conduit spacers shall be prefabricated interlocking units manufactured for the intended purpose. They shall be of double wall construction made of high grade, high density polyethylene complete with interlocking cap and base pads. They shall be designed to accept No. 4 reinforcing bars installed vertically.

**110-2.6 Concrete.** Concrete shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures or **per state department of transportation structural concrete with minimum 25% Type F fly ash, and a minimum allowable compressive strength of 4,000 psi (28 MPa).**

**110-2.7 Precast concrete structures.** Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another RPR approved third party certification program. Precast concrete structures shall conform to ASTM C478.

**110-2.8 Flowable backfill.** Flowable material used to back fill conduit and duct bank trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

**110-2.9 Detectable warning tape.** Plastic, detectable, American Public Works Association (APWA) red (electrical power lines, cables, conduit and lighting cable), orange (telephone/fiber optic cabling) with

continuous legend magnetic tape shall be polyethylene film with a metallized foil core and shall be 3-6 inches (75-150 mm) wide. Detectable tape is incidental to the respective bid item.

### CONSTRUCTION METHODS

**110-3.1 General.** The Contractor shall install underground duct banks and conduits at the approximate locations indicated on the plans. The RPR shall indicate specific locations as the work progresses, if required to differ from the plans. Duct banks and conduits shall be of the size, material, and type indicated on the plans or specifications. Where no size is indicated on the plans or in the specifications, conduits shall be not less than 2 inches (50 mm) inside diameter or comply with the National Electrical Code based on cable to be installed, whichever is larger. All duct bank and conduit lines shall be laid so as to grade toward access points and duct or conduit ends for drainage. Unless shown otherwise on the plans, grades shall be at least 3 inches (75 mm) per 100 feet (30 m). On runs where it is not practicable to maintain the grade all one way, the duct bank and conduit lines shall be graded from the center in both directions toward access points or conduit ends, with a drain into the storm drainage system. Pockets or traps where moisture may accumulate shall be avoided. Under pavement, the top of the duct bank shall not be less than 18 inches (0.5 m) below the subgrade; in other locations, the top of the duct bank or underground conduit shall be not less than 18 inches (0.5 m) below finished grade.

The Contractor shall mandrel each individual conduit whether the conduit is direct-buried or part of a duct bank. An iron-shod mandrel, not more than 1/4 inch (6 mm) smaller than the bore of the conduit shall be pulled or pushed through each conduit. The mandrel shall have a leather or rubber gasket slightly larger than the conduit hole.

The Contractor shall swab out all conduits/ducts and clean base can, manhole, pull boxes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed the light bases, manholes, pull boxes, etc., and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, base cans, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be recleaned at the Contractor's expense. All accessible points shall be kept closed when not installing cable. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

For pulling the permanent wiring, each individual conduit, whether the conduit is direct-buried or part of a duct bank, shall be provided with a 200-pound (90 kg) test polypropylene pull rope. The ends shall be secured and sufficient length shall be left in access points to prevent it from slipping back into the conduit. Where spare conduits are installed, as indicated on the plans, the open ends shall be plugged with removable tapered plugs, designed for this purpose.

All conduits shall be securely fastened in place during construction and shall be plugged to prevent contaminants from entering the conduits. Any conduit section having a defective joint shall not be installed. Ducts shall be supported and spaced apart using approved spacers at intervals not to exceed 5 feet (1.5 m).

Unless otherwise shown on the plans, concrete encased duct banks shall be used when crossing under pavements expected to carry aircraft loads, such as runways, taxiways, taxilanes, ramps and aprons. When under paved shoulders and other paved areas, conduit and duct banks shall be encased using flowable fill for protection.

All conduits within concrete encasement of the duct banks shall terminate with female ends for ease in current and future use. Install factory plugs in all unused ends. Do not cover the ends or plugs with concrete.

Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored.

Trenches for conduits and duct banks may be excavated manually or with mechanical trenching equipment unless in pavement, in which case they shall be excavated with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of shoulder surface is disturbed. Blades of graders shall not be used to excavate the trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 inches (75 mm) below the required conduit or duct bank depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch (6.3 mm) sieve. Flowable backfill may alternatively be used

Underground electrical warning (Caution) tape shall be installed in the trench above all underground duct banks and conduits in unpaved areas. Contractor shall submit a sample of the proposed warning tape for approval by the RPR. If not shown on the plans, the warning tape shall be located 6 inches above the duct/conduit or the counterpoise wire if present.

Joints in plastic conduit shall be prepared per the manufacturer's recommendations for the particular type of conduit. Plastic conduit shall be prepared by application of a plastic cleaner and brushing a plastic solvent on the outside of the conduit ends and on the inside of the couplings. The conduit fitting shall then be slipped together with a quick one-quarter turn twist to set the joint tightly. Where more than one conduit is placed in a single trench, or in duct banks, joints in the conduit shall be staggered a minimum of 2 feet (60 cm).

Changes in direction of runs exceeding 10 degrees, either vertical or horizontal, shall be accomplished using manufactured sweep bends.

Whether or not specifically indicated on the drawings, where the soil encountered at established duct bank grade is an unsuitable material, as determined by the RPR, the unsuitable material shall be removed per Item P-152 and replaced with suitable material. Additional duct bank supports shall be installed, as approved by the RPR.

All excavation shall be unclassified and shall be considered incidental to Item L-110. Dewatering necessary for duct installation, and erosion per federal, state, and local requirements is incidental to Item L-110.

Unless otherwise specified, excavated materials that are deemed by the RPR to be unsuitable for use in backfill or embankments shall be removed and disposed of offsite.

Any excess excavation shall be filled with suitable material approved by the RPR and compacted per Item P-152.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables) cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

**a.** Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred

**b.** Trenching, etc., in cable areas shall then proceed with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair.

**110-3.2 Duct banks.** Unless otherwise shown in the plans, duct banks shall be installed so that the top of the concrete envelope is not less than 18 inches (0.5 m) below the bottom of the base or stabilized base course layers where installed under runways, taxiways, aprons, or other paved areas, and not less than 18 inches (0.5 m) below finished grade where installed in unpaved areas.

Unless otherwise shown on the plans, duct banks under paved areas shall extend at least 3 feet (1 m) beyond the edges of the pavement or 3 feet (1 m) beyond any under drains that may be installed alongside the paved area. Trenches for duct banks shall be opened the complete length before concrete is placed so that if any obstructions are encountered, provisions can be made to avoid them. Unless otherwise shown on the plans, all duct banks shall be placed on a layer of concrete not less than 3 inches (75 mm) thick prior to its initial set. The Contractor shall space the conduits not less than 3 inches (75 mm) apart (measured from outside wall to outside wall). All such multiple conduits shall be placed using conduit spacers applicable to the type of conduit. As the conduit laying progresses, concrete shall be placed around and on top of the conduits not less than 3 inches (75 mm) thick unless otherwise shown on the plans. All conduits shall terminate with female ends for ease of access in current and future use. Install factory plugs in all unused ends. Do not cover the ends or plugs with concrete.

Conduits forming the duct bank shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches (150 mm) to anchor the assembly into the earth prior to placing the concrete encasement. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot (1.5-m) intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the RPR for review prior to use.

When specified, the Contractor shall reinforce the bottom side and top of encasements with steel reinforcing mesh or fabric or other approved metal reinforcement. When directed, the Contractor shall supply additional supports where the ground is soft and boggy, where ducts cross under roadways, or where shown on the plans. Under such conditions, the complete duct structure shall be supported on reinforced concrete footings, piers, or piles located at approximately 5-foot (1.5-m) intervals.

All pavement surfaces that are to have ducts installed therein shall be neatly saw cut to form a vertical face. All excavation shall be included in the contract with price for the duct.

Install a plastic, detectable, color as noted, 3 to 6 inches (75 to 150 mm) wide tape, 8 inches (200 mm) minimum below grade above all underground conduit or duct lines not installed under pavement. Utilize the 3-inch (75-mm) wide tape only for single conduit runs. Utilize the 6-inch (150-mm) wide tape for multiple conduits and duct banks. For duct banks equal to or greater than 24 inches (600 mm) in width, utilize more than one tape for sufficient coverage and identification of the duct bank as required.

When existing cables are to be placed in split duct, encased in concrete, the cable shall be carefully located and exposed by hand tools. Prior to being placed in duct, the RPR shall be notified so that he may inspect the cable and determine that it is in good condition. Where required, split duct shall be installed as shown on the drawings or as required by the RPR.

**110-3.3 Conduits without concrete encasement.** Trenches for single-conduit lines shall be not less than 6 inches (150 mm) nor more than 12 inches (300 mm) wide. The trench for 2 or more conduits installed at the same level shall be proportionately wider. Trench bottoms for conduits without concrete encasement shall be made to conform accurately to grade so as to provide uniform support for the conduit along its entire length.

Unless otherwise shown on the plans, a layer of fine earth material, at least 4 inches (100 mm) thick (loose measurement) shall be placed in the bottom of the trench as bedding for the conduit. The bedding material

shall consist of soft dirt, sand or other fine fill, and it shall contain no particles that would be retained on a 1/4-inch (6.3 mm) sieve. The bedding material shall be tamped until firm. Flowable backfill may alternatively be used.

Unless otherwise shown on plans, conduits shall be installed so that the tops of all conduits within the Airport's secured area where trespassing is prohibited are at least 18 inches (0.5 m) below the finished grade. Conduits outside the Airport's secured area shall be installed so that the tops of the conduits are at least 24 inches (60 cm) below the finished grade per National Electric Code (NEC), Table 300.5.

When two or more individual conduits intended to carry conductors of equivalent voltage insulation rating are installed in the same trench without concrete encasement, they shall be spaced not less than 3 inches (75 mm) apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches (150 mm) apart in a vertical direction. Where two or more individual conduits intended to carry conductors of differing voltage insulation rating are installed in the same trench without concrete encasement, they shall be placed not less than 3 inches (75 mm) apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches (150 mm) apart in a vertical direction.

Trenches shall be opened the complete length between normal termination points before conduit is installed so that if any unforeseen obstructions are encountered, proper provisions can be made to avoid them.

Conduits shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches (150 mm) to anchor the assembly into the earth while backfilling. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot (1.5-m) intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the RPR for review prior to use.

**110-3.4 Markers.** The location of each end and of each change of direction of conduits and duct banks shall be marked by a concrete slab marker 2 feet (60 cm) square and 4 - 6 inches (100 - 150 mm) thick extending approximately one inch (25 mm) above the surface. The markers shall also be located directly above the ends of all conduits or duct banks, except where they terminate in a junction/access structure or building. Each cable or duct run from a line of lights and signs to the equipment vault must be marked at approximately every 200 feet (61 m) along the cable or duct run, with an additional marker at each change of direction of cable or duct run.

The Contractor shall impress the word "DUCT" or "CONDUIT" on each marker slab. Impression of letters shall be done in a manner, approved by the RPR, for a neat, professional appearance. All letters and words must be neatly stenciled. After placement, all markers shall be given one coat of high-visibility orange paint, as approved by the RPR. The Contractor shall also impress on the slab the number and size of conduits beneath the marker along with all other necessary information as determined by the RPR. The letters shall be 4 inches (100 mm) high and 3 inches (75 mm) wide with width of stroke 1/2 inch (12 mm) and 1/4 inch (6 mm) deep or as large as the available space permits. Furnishing and installation of duct markers is incidental to the respective duct pay item.

**110-3.5 Backfilling for conduits.** For conduits, 8 inches (200 mm) of sand, soft earth, or other fine fill (loose measurement) shall be placed around the conduits ducts and carefully tamped around and over them with hand tampers. The remaining trench shall then be backfilled and compacted per Item P-152 except that material used for back fill shall be select material not larger than 4 inches (100 mm) in diameter.

Flowable backfill may alternatively be used.

Trenches shall not contain pools of water during back filling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the RPR.

**110-3.6 Backfilling for duct banks.** After the concrete has cured, the remaining trench shall be backfilled and compacted per Item P-152 "Excavation and Embankment" except that the material used for backfill shall be select material not larger than 4 inches (100 mm) in diameter. In addition to the requirements of Item P-152, where duct banks are installed under pavement, one moisture/density test per lift shall be made for each 250 linear feet (76 m) of duct bank or one work period's construction, whichever is less.

Flowable backfill may alternatively be used.

Trenches shall not contain pools of water during backfilling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the RPR.

**110-3.7 Restoration.** Where sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by the work shall be restored to its original condition. The restoration shall include fertilizing, liming, seeding, and mulching shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. All restoration shall be considered incidental to the respective L-110 pay item. Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD) and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

**110-3.8 Ownership of removed cable. Contractor shall dispose of cables off airport property**

## METHOD OF MEASUREMENT

**110-4.1** Underground conduits and duct banks shall be measured by the linear feet (meter) of conduits and duct banks installed, including encasement, locator tape, trenching and backfill with designated material, and restoration, and for drain lines, the termination at the drainage structure, all measured in place, completed, and accepted. Separate measurement shall be made for the various types and sizes.

## BASIS OF PAYMENT

**110-5.1** Payment will be made at the contract unit price per linear foot for each type and size of conduit and duct bank completed and accepted, including trench and backfill with the designated material, and, for drain lines, the termination at the drainage structure. This price shall be full compensation for removal and disposal of existing duct banks and conduits as shown on the plans, furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item per the provisions and intent of the plans and specifications.

Payment will be made under:

Item L-110-5.1 Concrete Encased Electrical Duct Bank, 2-way, 4" Conduit per linear foot

Item L-110-5.2 Directional Bore Electrical Conduit, 1-way, 2" Conduit per linear foot

Item L-110-5.3 Non-encased Electrical Conduit, 1-way, 2-inch (50 mm) C – per linear 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 Circular (AC)

AC 150/5340-30 Design and Installation Details for Airport Visual Aids

AC 150/5345-53 Airport Lighting Equipment Certification Program

#### ASTM International (ASTM)

ASTM A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

#### National Fire Protection Association (NFPA)

NFPA-70 National Electrical Code (NEC)

#### Underwriters Laboratories (UL)

UL Standard 6 Electrical Rigid Metal Conduit - Steel

UL Standard 514B Conduit, Tubing, and Cable Fittings

UL Standard 514C Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers

UL Standard 1242 Electrical Intermediate Metal Conduit Steel

UL Standard 651 Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings

UL Standard 651A Type EB and A Rigid PVC Conduit and HDPE Conduit

### END OF ITEM L-110

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## Item L-115 Electrical Manholes and Junction Structures

### DESCRIPTION

**115-1.1** This item shall consist of electrical manholes and junction structures (hand holes, pull boxes, junction cans, etc.) installed per this specification, at the indicated locations and conforming to the lines, grades and dimensions shown on the plans or as required by the RPR. This item shall include the installation of each electrical manhole and/or junction structures with all associated excavation, backfilling, sheeting and bracing, concrete, reinforcing steel, ladders, appurtenances, testing, dewatering and restoration of surfaces to the satisfaction of the RPR.

### EQUIPMENT AND MATERIALS

#### 115-2.1 General.

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when so requested by the RPR.

b. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

c. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

**115-2.2 Concrete structures.** Concrete shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures. Cast-in-place concrete structures shall be as shown on the plans.

**115-2.3 Precast concrete structures.** Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another engineer approved third party certification program. Provide precast concrete structures where shown on the plans.

Precast concrete structures shall be an approved standard design of the manufacturer. Precast units shall have mortar or bitumastic sealer placed between all joints to make them watertight. The structure shall be designed to withstand **60,000** lb aircraft loads, unless otherwise shown on the plans. Openings or knockouts shall be provided in the structure as detailed on the plans.

Threaded inserts and pulling eyes shall be cast in as shown on the plans.

If the Contractor chooses to propose a different structural design, signed and sealed shop drawings, design calculations, and other information requested by the RPR shall be submitted by the Contractor to allow for a full evaluation by the RPR. The RPR shall review per the process defined in the General Provisions.

**115-2.4 Junction boxes.** Junction boxes shall be L-867 Class 1 (non-load bearing) or L-868 Class 1 (load bearing) airport light bases that are encased in concrete. The light bases shall have a L-894 blank cover, gasket, and stainless steel hardware. All bolts, studs, nuts, lock washers, and other similar fasteners used for the light fixture assemblies must be fabricated from 316L (equivalent to EN 1.4404), 18-8, 410, or 416 stainless steel. If 18-8, 410, or 416 stainless steel is utilized it shall be passivated and be free from any discoloration. Covers shall be 3/8-inch (9-mm) thickness for L-867 and 3/4-inch (19-mm) thickness for L-868. All junction boxes shall be provided with both internal and external ground lugs.

**115-2.5 Mortar.** The mortar shall be composed of one part of cement and two parts of mortar sand, by volume. The cement shall be per the requirements in ASTM C150, Type I. The sand shall be per the requirements in ASTM C144. Hydrated lime may be added to the mixture of sand and cement in an amount not to exceed 15% of the weight of cement used. The hydrated lime shall meet the requirements of ASTM C206. Water shall be potable, reasonably clean and free of oil, salt, acid, alkali, sugar, vegetable, or other substances injurious to the finished product.

**115-2.6 Concrete.** All concrete used in structures shall conform to the requirements of Item P-610, Concrete for Miscellaneous Structures.

**115-2.7 Frames and covers.** The frames shall conform to one of the following requirements:

- a. ASTM A48            Gray iron castings
- b. ASTM A47            Malleable iron castings
- c. ASTM A27            Steel castings
- d. ASTM A283, Grade D    Structural steel for grates and frames
- e. ASTM A536           Ductile iron castings
- f. ASTM A897           Austempered ductile iron castings

All castings specified shall withstand a maximum tire pressure of **150** psi and maximum load of **60,000** lbs.

All castings or structural steel units shall conform to the dimensions shown on the plans and shall be designed to support the loadings specified.

Each frame and cover unit shall be provided with fastening members to prevent it from being dislodged by traffic, but which will allow easy removal for access to the structure.

All castings shall be thoroughly cleaned. After fabrication, structural steel units shall be galvanized to meet the requirements of ASTM A123.

Each cover shall have the word "ELECTRIC" or other approved designation cast on it. Each frame and cover shall be as shown on the plans or approved equivalent. No cable notches are required.

Each manhole shall be provided with a "DANGER -- PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" safety warning sign as detailed in the Contract Documents and in accordance with OSHA 1910.146 (c)(2).

**115-2.8 Ladders.** Ladders, if specified, shall be galvanized steel or as shown on the plans.

**115-2.9 Reinforcing steel.** All reinforcing steel shall be deformed bars of new billet steel meeting the requirements of ASTM A615, Grade 60.

**115-2.10 Bedding/special backfill.** Bedding or special backfill shall be as shown on the plans.

**115-2.11 Flowable backfill.** Flowable material used to backfill shall conform to the requirements of Item P-153, Controlled Low Strength Material.

**115-2.12 Cable trays.** Cable trays shall be of galvanized steel. Cable trays shall be located as shown on the plans.

**115-2.13 Plastic conduit.** Plastic conduit shall comply with Item L-110, Airport Underground Electrical Duct Banks and Conduits.

**115-2.14 Conduit terminators.** Conduit terminators shall be pre-manufactured for the specific purpose and sized as required or as shown on the plans.

**115-2.15 Pulling-in irons.** Pulling-in irons shall be manufactured with 7/8-inch (22 mm) diameter hot-dipped galvanized steel or stress-relieved carbon steel roping designed for concrete applications (7 strand, 1/2-inch (12 mm) diameter with an ultimate strength of 270,000 psi (1862 MPa)). Where stress-relieved carbon steel roping is used, a rustproof sleeve shall be installed at the hooking point and all exposed surfaces shall be encapsulated with a polyester coating to prevent corrosion.

**115-2.16 Ground rods.** Ground rods shall be one piece, copper or copper clad steel. The ground rods shall be of the length and diameter specified on the plans, but in no case shall they be less than 8 feet (2.4 m) long nor less than 5/8 inch (16 mm) in diameter.

## CONSTRUCTION METHODS

**115-3.1 Unclassified excavation.** It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Damage to utility lines, through lack of care in excavating, shall be repaired or replaced to the satisfaction of the RPR without additional expense to the Owner.

The Contractor shall perform excavation for structures and structure footings to the lines and grades or elevations shown on the plans or as staked by the RPR. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or structure footings shown.

All excavation shall be unclassified and shall be considered incidental to Item L-115. Dewatering necessary for structure installation and erosion per federal, state, and local requirements is incidental to Item L-115.

Boulders, logs and all other objectionable material encountered in excavation shall be removed. All rock and other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped or serrated, as directed by the RPR. All seams, crevices, disintegrated rock and thin strata shall be removed. When concrete is to rest on a surface other than rock, special care shall be taken not to disturb

the bottom of the excavation. Excavation to final grade shall not be made until just before the concrete or reinforcing is to be placed.

The Contractor shall provide all bracing, sheeting and shoring necessary to implement and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheeting and shoring shall be included in the unit price bid for the structure.

Unless otherwise provided, bracing, sheeting and shoring involved in the construction of this item shall be removed by the Contractor after the completion of the structure. Removal shall be effected in a manner that will not disturb or mar finished masonry. The cost of removal shall be included in the unit price bid for the structure.

After each excavation is completed, the Contractor shall notify the RPR. Structures shall be placed after the RPR has approved the depth of the excavation and the suitability of the foundation material.

Prior to installation the Contractor shall provide a minimum of 6 inches (150 mm) of sand or a material approved by the RPR as a suitable base to receive the structure. The base material shall be compacted and graded level and at proper elevation to receive the structure in proper relation to the conduit grade or ground cover requirements, as indicated on the plans.

**115-3.2 Concrete structures.** Concrete structures shall be built on prepared foundations conforming to the dimensions and form indicated on the plans. The concrete and construction methods shall conform to the requirements specified in Item P-610. Any reinforcement required shall be placed as indicated on the plans and shall be approved by the RPR before the concrete is placed.

**115-3.3 Precast unit installations.** Precast units shall be installed plumb and true. Joints shall be made watertight by use of sealant at each tongue-and-groove joint and at roof of manhole. Excess sealant shall be removed and severe surface projections on exterior of neck shall be removed.

**115-3.4 Placement and treatment of castings, frames and fittings.** All castings, frames and fittings shall be placed in the positions indicated on the Plans or as directed by the RPR and shall be set true to line and to correct elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place and position before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.

Field connections shall be made with bolts, unless indicated otherwise. Welding will not be permitted unless shown otherwise on the approved shop drawings and written approval is granted by the casting manufacturer. Erection equipment shall be suitable and safe for the workman. Errors in shop fabrication or deformation resulting from handling and transportation that prevent the proper assembly and fitting of parts shall be reported immediately to the RPR and approval of the method of correction shall be obtained. Approved corrections shall be made at Contractor's expense.

Anchor bolts and anchors shall be properly located and built into connection work. Bolts and anchors shall be preset by the use of templates or such other methods as may be required to locate the anchors and anchor bolts accurately.

Pulling-in irons shall be located opposite all conduit entrances into structures to provide a strong, convenient attachment for pulling-in blocks when installing cables. Pulling-in irons shall be set directly into the concrete walls of the structure.

**115-3.5 Installation of ladders.** Ladders shall be installed such that they may be removed if necessary. Mounting brackets shall be supplied top and bottom and shall be cast in place during fabrication of the structure or drilled and grouted in place after erection of the structure.

**115-3.6 Removal of sheeting and bracing.** In general, all sheeting and bracing used to support the sides of trenches or other open excavations shall be withdrawn as the trenches or other open excavations are being refilled. That portion of the sheeting extending below the top of a structure shall be withdrawn, unless otherwise directed, before more than 6 inches (150 mm) of material is placed above the top of the structure and before any bracing is removed. Voids left by the sheeting shall be carefully refilled with selected material and rammed tight with tools especially adapted for the purpose or otherwise as may be approved.

The RPR may direct the Contractor to delay the removal of sheeting and bracing if, in his judgment, the installed work has not attained the necessary strength to permit placing of backfill.

**115-3.7 Backfilling.** After a structure has been completed, the area around it shall be backfilled in horizontal layers not to exceed 6 inches (150 mm) in thickness measured after compaction to the density requirements in Item P-152. Each layer shall be deposited all around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the plans or as directed by the RPR.

Backfill shall not be placed against any structure until approval is given by the RPR. In the case of concrete, such approval shall not be given until tests made by the laboratory under supervision of the RPR establish that the concrete has attained sufficient strength to provide a factor of safety against damage or strain in withstanding any pressure created by the backfill or the methods used in placing it.

Where required, the RPR may direct the Contractor to add, at his own expense, sufficient water during compaction to assure a complete consolidation of the backfill. The Contractor shall be responsible for all damage or injury done to conduits, duct banks, structures, property or persons due to improper placing or compacting of backfill.

**115-3.8 Connection of duct banks.** To relieve stress of joint between concrete-encased duct banks and structure walls, reinforcement rods shall be placed in the structure wall and shall be formed and tied into duct bank reinforcement at the time the duct bank is installed.

**115-3.9 Grounding.** A ground rod shall be installed in the floor of all concrete structures so that the top of rod extends 6 inches (150 mm) above the floor. The ground rod shall be installed within one foot (30 cm) of a corner of the concrete structure. Ground rods shall be installed prior to casting the bottom slab. Where the soil condition does not permit driving the ground rod into the earth without damage to the ground rod, the Contractor shall drill a 4-inch (100 mm) diameter hole into the earth to receive the ground rod. The hole around the ground rod shall be filled throughout its length, below slab, with Portland cement grout. Ground rods shall be installed in precast bottom slab of structures by drilling a hole through bottom slab and installing the ground rod. Bottom slab penetration shall be sealed watertight with Portland cement grout around the ground rod.

A grounding bus of 4/0 bare stranded copper shall be exothermically bonded to the ground rod and loop the concrete structure walls. The ground bus shall be a minimum of one foot (30 cm) above the floor of the structure and separate from other cables. No. 2 American wire gauge (AWG) bare copper pigtailed shall bond the grounding bus to all cable trays and other metal hardware within the concrete structure. Connections to the grounding bus shall be exothermic. If an exothermic weld is not possible, connections to the grounding bus shall be made by using connectors approved for direct burial in soil or concrete per UL 467. Hardware connections may be mechanical, using a lug designed for that purpose.

**115-3.10 Cleanup and repair.** After erection of all galvanized items, damaged areas shall be repaired by applying a liquid cold-galvanizing compound per MIL-P-21035. Surfaces shall be prepared and compound applied per the manufacturer's recommendations.

Prior to acceptance, the entire structure shall be cleaned of all dirt and debris.

**115-3.11 Restoration.** After the backfill is completed, the Contractor shall dispose of all surplus material, dirt and rubbish from the site. The Contractor shall restore all disturbed areas equivalent to or better than their original condition. All sodding, grading and restoration shall be considered incidental to the respective Item L-115 pay item.

The Contractor shall grade around structures as required to provide positive drainage away from the structure.

Areas with special surface treatment, such as roads, sidewalks, or other paved areas shall have backfill compacted to match surrounding areas, and surfaces shall be repaired using materials comparable to original materials.

Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD), and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

After all work is completed, the Contractor shall remove all tools and other equipment, leaving the entire site free, clear and in good condition.

**115-3.12 Inspection.** Prior to final approval, the electrical structures shall be thoroughly inspected for conformance with the plans and this specification. Any indication of defects in materials or workmanship shall be further investigated and corrected. The earth resistance to ground of each ground rod shall not exceed 25 ohms. Each ground rod shall be tested using the fall-of-potential ground impedance test per American National Standards Institute / Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81. This test shall be performed prior to establishing connections to other ground electrodes.

**115-3.13 Manhole elevation adjustments.** The Contractor shall adjust the tops of existing manholes in areas designated in the Contract Documents to the new elevations shown. The Contractor shall be responsible for determining the exact height adjustment required to raise or lower the top of each manhole to the new elevations. The existing top elevation of each manhole to be adjusted shall be determined in the field and subtracted/added from the proposed top elevation.

The Contractor shall remove/extend the existing top section or ring and cover on the manhole structure or manhole access. The Contractor shall install precast concrete sections or grade rings of the required dimensions to adjust the manhole top to the new proposed elevation or shall cut the existing manhole walls to shorten the existing structure, as required by final grades. The Contractor shall reinstall the manhole top section or ring and cover on top and check the new top elevation.

The Contractor shall construct a concrete slab around the top of adjusted structures located in graded areas that are not to be paved. The concrete slab shall conform to the dimensions shown on the plans.

**115-3.14 Duct extension to existing ducts.** Where existing concrete encased ducts are to be extended, the duct extension shall be concrete encased plastic conduit. The fittings to connect the ducts together shall be standard manufactured connectors designed and approved for the purpose. The duct extensions shall be installed according to the concrete encased duct detail and as shown on the plans.

#### METHOD OF MEASUREMENT

**115-4.1** Electrical manholes and junction structures shall be measured by each unit completed in place and accepted. The following items shall be included in the price of each unit: All required excavation and dewatering;; sheeting and bracing; all required backfilling with on-site materials; restoration of all surfaces and finished grading and turfing; all required connections; temporary cables and connections; and ground rod testing

**115-4.2 Manhole elevation adjustments** shall be measured by the completed unit installed, in place, completed, and accepted. Separate measurement shall not be made for the various types and sizes.

#### BASIS OF PAYMENT

**115-5.1** The accepted quantity of electrical manholes and junction structures will be paid for at the Contract unit price per each, complete and in place. This price shall be full compensation for furnishing all materials and for all preparation, excavation, backfilling and placing of the materials, furnishing and installation of appurtenances and connections to duct banks and other structures as may be required to complete the item as shown on the plans and for all labor, equipment, tools and incidentals necessary to complete the structure.

**115-5.2** Payment shall be made at the contract unit price for manhole elevation adjustments. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary, including but not limited to, spacers, concrete, rebar, dewatering, excavating, backfill, topsoil, sodding and pavement restoration, where required, to complete this item as shown in the plans and to the satisfaction of the RPR.

Payment will be made under:

Item L-115-5.1 L-867 Electrical Junction Box, Class 1A, Size B (12") – Per Each

#### REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American National Standards Institute / Insulated Cable Engineers Association (ANSI/ICEA)

ANSI/IEEE STD 81	IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
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Advisory Circular (AC)

AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
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AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
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AC 150/5345-42	Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories
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AC 150/5340-30 Design and Installation Details for Airport Visual Aids

AC 150/5345-53 Airport Lighting Equipment Certification Program

Commercial Item Description (CID)

A-A 59544 Cable and Wire, Electrical (Power, Fixed Installation)

ASTM International (ASTM)

ASTM A27 Standard Specification for Steel Castings, Carbon, for General Application

ASTM A47 Standard Specification for Ferritic Malleable Iron Castings

ASTM A48 Standard Specification for Gray Iron Castings

ASTM A123 Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products

ASTM A283 Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates

ASTM A536 Standard Specification for Ductile Iron Castings

ASTM A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

ASTM A897 Standard Specification for Austempered Ductile Iron Castings

ASTM C144 Standard Specification for Aggregate for Masonry Mortar

ASTM C150 Standard Specification for Portland Cement

ASTM C206 Standard Specification for Finishing Hydrated Lime

FAA Engineering Brief (EB)

EB #83 In Pavement Light Fixture Bolts

Mil Spec

MIL-P-21035 Paint High Zinc Dust Content, Galvanizing Repair

National Fire Protection Association (NFPA)

NFPA-70 National Electrical Code (NEC)

**END OF ITEM L-115**



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## **Item L-119 Airport Obstruction Lights**

### **DESCRIPTION**

**119-1.1** This item shall consist of furnishing and installing obstruction lights per these specifications. Included in this item shall be the furnishing and installing of wood poles, steel or iron pipes, or other supports as required in the plans or specifications and in accordance with the requirements in advisory circular (AC) 70/7460-1, Obstruction Marking and Lighting

This item shall also include all wire and cable connections, the furnishing and installing of all necessary conduits and fittings, insulators, pole steps, pole cross arms, and the painting of poles and pipes. In addition, it includes the furnishing and installing of all lamps and, if required, the furnishing and installing of insulating transformers, the servicing and testing of the installation and all incidentals necessary to place the lights in operation as completed units to the satisfaction of the RPR.

### **EQUIPMENT AND MATERIALS**

#### **119-2.1 General.**

**a.** Airport lighting equipment and materials covered by specifications shall be certified under AC 150/5345-53, Airport Lighting Equipment Certification Program (ALECP) and listed in the ALECP Addendum.

**b.** All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

**c.** Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

**d.** All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). Contractor is solely responsible for delays in the project that accrue directly or indirectly from late submissions or resubmissions of submittals.

**e.** The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be submitted electronically in pdf format,

tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

**119-2.2 Obstruction lights.** The obstruction lighting assembly shall be Type **Dual-Fixture LED L-810** meeting the requirements of AC 150/5345-43, Specification for Obstruction Lighting Equipment.

**119-2.3 Isolation transformers.** Where required for series circuits, the isolation transformers shall conform to the requirements of AC 150/5345-47, Specification for Series to Series Isolation Transformers for Airport Lighting Systems.

**119-2.4 Transformer housing.** Transformer housings, if specified, shall be per AC 150/5345-42, Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories.

**119-2.5 Conduit.** Steel conduit and fittings shall be per Underwriters Laboratories Standards 6, 514B, and 1242.

**119-2.6 Plastic conduit (for use below grade only).** Plastic conduit and fittings shall be per:

- UL 514B covers W-C-1094 - Conduit fittings all types, classes 1 through 3 and 6 through 10<sup>[1]</sup><sub>[SEP]</sub>
- UL 514C covers W-C-1094 - all types, class 5 junction box and cover in plastic (PVC)
- UL 651 covers W-C-1094 - Rigid PVC Conduit, types I and II, class 4<sup>[1]</sup><sub>[SEP]</sub>
- UL 651A covers W-C-1094 - Rigid PVC Conduit and high-density polyethylene (HDPE) Conduit type III and class 4

and must be one of the following, as shown on the plans:

- a. Type I—Schedule 40 PVC suitable for underground use either direct-buried or encased in concrete.
- b. Type II—Schedule 40 PVC suitable for either above ground or underground use.

**119-2.7 Electrical wire and cable.** For ratings up to 600 volts, moisture and heat resistant thermoplastic wire conforming to Commercial Item Description A-A-59544A, Type THWN-2, shall be used. The wires shall be of the type, size, number of conductors, and voltage shown in the plans or in the proposal. Overhead line wire from pole to pole, where specified, shall be per American National Standards Institute/Insulated Cable Engineers Association (ANSI/ICEA) S-70-547-2007.

**119-2.8 Miscellaneous.** Paint, poles, pole steps, insulators, and all other miscellaneous materials necessary for the completion of this item shall be new and first-grade commercial products. These products shall be as specified in the plans or specifications.

## CONSTRUCTION METHODS

**119-3.1 Placing the obstruction lights.** The Contractor shall furnish and install double-obstruction lights as specified and shown in the plans. The obstruction lights shall be mounted on poles, buildings, or towers at approximately the location shown in the plans. The exact location shall be approved by the RPR in accordance with AC 70/7460-1, Obstruction Marking and Lighting.

**119-3.2 Installation on poles.** Where obstruction lights are to be mounted on poles, each obstruction

light shall be installed with its hub at least as high as the top of the pole. All wiring shall be run in not less than one inch (25 mm) galvanized rigid steel conduit. If specified, pole steps shall be furnished and installed, the lowest step being 5 feet (1.5 m) above ground level. Steps shall be installed alternately on diametrically opposite sides of the pole to give a rise of 18 inches (0.5 m) for each step. Conduit shall be fastened to the pole with galvanized steel pipe straps and shall be secured by galvanized lag screws. Poles shall be painted as shown in the plans and specifications.

When obstruction lights are installed on existing telephone or power poles, a large fiber insulating sleeve of adequate diameter and not less than 4 feet (1.2 m) long, shall be installed to extend 6 inches (150 mm) above the conductors on the upper cross arm. In addition, the sleeve shall be at least 18 inches (0.5 m) below the conductors on the lower cross arm. The details of this installation shall be per the plans.

**119-3.3 Installation on beacon tower.** Where obstruction lights are installed on a beacon tower, two obstruction lights shall be mounted on top of the beacon tower using one inch (25 mm) conduit. The conduit shall screw directly into the obstruction light fixtures and shall support them at a height of not less than 4 inches (100 mm) above the top of the rotating beacon. If obstruction lights are specified at lower levels, the Contractor shall install not less than one inch (25 mm) galvanized rigid steel conduit with standard conduit fittings for mounting the fixtures. The fixtures shall be mounted in an upright position in all cases. The conduit shall be fastened to the tower members with Wraplock® straps (or equivalent), clamps, or approved fasteners spaced approximately 5 feet (1.5 m) apart. Three coats of international orange paint per Federal Specification 595, Number 12197 shall be applied (one prime, one body, and one finish coat) to all exposed material installed.

**119 3.4 Installation on buildings, towers, smokestacks, etc.** Where obstruction lights are to be installed on buildings or similar structures, the installation shall be made per the details shown in the plans. The hub of the obstruction light shall be not less than one foot (30 cm) above the highest point of the obstruction except in the case of smokestacks where the uppermost units shall be mounted not less than 5 feet (1.5 m), nor more than 10 feet (3 m) below the top of the stack. Conduit supporting the obstruction light units shall be fastened to wooden structures with galvanized steel pipe straps and shall be secured by 1-1/2 inch (38 mm) No. 10 galvanized wood screws. Conduit shall be fastened to masonry structures by the use of expansion shields, screw anchors, or toggle bolts using No. 10, or larger, galvanized wood or machine screws. Conduit fastened to structural steel shall have the straps held with not less than No. 10 roundhead machine screws in drilled and tapped holes. Fastenings shall be approximately 5 feet (1.5 m) apart. Three coats of paint shall be applied (one prime, one body, and one finish coat) with color per Federal Specification 595, international orange, number 12197 paint to all exposed material installed.

**119-3.5 Series isolation transformers.** If it is designed for use in a series lighting circuit, the L-810 series obstruction light does not include a film cutout. Therefore, an isolation transformer is required with each series lamp. Double series units of this type require two isolation transformers. The transformer shall be housed in a light base per paragraph 119-2.4 or buried directly in the earth per the details shown in the plans.

**119-3.6 Wiring.** The Contractor shall furnish all necessary labor and materials. The Contractor shall make complete electrical connections from the underground cable or other source of power per the wiring diagram furnished with the project plans. If underground cable is required for the power feed and if duct is required under paved areas, the cable and duct shall be installed per and paid for as described in Item L-108, Underground Power Cable for Airports, and Item L-110, Airport Underground Electrical Duct Banks and Conduit.

**119-3.7 Lamps.** The Contractor shall furnish and install in each unit one or two lamps that are per the manufacturer's requirements. Provide two lamp sets as spares.

**119-3.8 Tests.** The installation shall be fully tested by continuous operation for not less than 1/2 hour as

a completed unit prior to acceptance. These tests shall include the functioning of each control not less than 10 times.

#### **METHOD OF MEASUREMENT**

**119-4.1** The quantity of lights to be paid for under this item shall be the number of single- or double-type obstruction lights installed and accepted as completed units, in place, ready for operation.

#### **BASIS OF PAYMENT**

**119-5.1** Payment will be made at the contract unit price for each completed obstruction light installed, in place by the Contractor, and accepted by the RPR. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item L-119-5.1 Airport Obstruction Light, in Place - per each

#### **REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 70/7460-1 Obstruction Marking and Lighting

AC 150/5340-30 Design and Installation Details for Airport Visual Aids

AC 150/5345-7 Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits

AC 150/5345-42 Specification for Airport Light Bases, Transformer Housing, Junction Boxes, and Accessories

AC 150/5345-43 Specification for Obstruction Lighting Equipment

AC 150/5345-47 Specification for Series to Series Isolation Transformers for Airport Lighting Systems

AC 150/5345-53 Airport Lighting Equipment Certification Program

American National Standards Institute / Insulated Cable Engineers Association (ANSI/ICEA)

ANSI/ICEA S-70-547 Standards for Weather-Resistant Polyolefin Covered Connectors Commercial Item Description (CID)

A-A-59544A Cable and Wire, Electrical (Power, Fixed Installation)

Federal Standard (FED STD)

FED STD 595 Colors used in Government Procurement

National Fire Protection Association (NFPA)

NFPA-70 National Electrical Code (NEC)

Underwriters Laboratories (UL)

UL Standard 6 Electrical Rigid Metal Conduit – Steel

UL Standard 514B Conduit, Tubing, and Cable Fittings Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers

UL Standard 651 Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings

UL Standard 651A Type EB and A Rigid PVC Conduit and HDPE Conduit

UL Standard 1242 Electrical Intermediate Metal Conduit - Steel

**END OF ITEM L-119**

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## Item L-125 Installation of Airport Lighting Systems

### DESCRIPTION

**125-1.1** This item shall consist of airport lighting systems furnished and installed in accordance with this specification, the referenced specifications, and the applicable advisory circulars (ACs). The systems shall be installed at the locations and in accordance with the dimensions, design, and details shown in the plans. This item shall include the furnishing of all equipment, materials, services, and incidentals necessary to place the systems in operation as completed units to the satisfaction of the RPR.

### EQUIPMENT AND MATERIALS

#### 125-2.1 General.

a. Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall be certified under the Airport Lighting Equipment Certification Program in accordance with AC 150/5345-53, current version. FAA certified airfield lighting shall be compatible with each other to perform in compliance with FAA criteria and the intended operation. If the Contractor provides equipment that does not perform as intended because of incompatibility with the system, the Contractor assumes all costs to correct the system for to operate properly.

b. Manufacturer's certifications shall not relieve the Contractor of their responsibility to provide materials in accordance with these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

c. All materials and equipment used shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Clearly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be clearly made with arrows or circles (highlighting is not acceptable). The Contractor shall be responsible for delays in the project accruing directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be submitted in a neatly bound, properly sized 3-ring binder, tabbed by specification section and electronic PDF format, tabbed by specification section. The RPR reserves the right to reject any or all equipment, materials or procedures, which, in the RPR's opinion, does not meet the system design and the standards and codes, specified herein.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least **twelve (12) months** from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.



**All LED light fixtures, with the exception of obstruction lighting (AC 150/5345-43) must be warranted by the manufacturer for a minimum of 4 years after date of installation inclusive of all electronics.**

### EQUIPMENT AND MATERIALS

**125-2.2 Conduit/Duct.** Conduit shall conform to Specification Item L-110 Airport Underground Electrical Duct Banks and Conduits.

**125-2.3 Cable and Counterpoise.** Cable and Counterpoise shall conform to Item L-108 Underground Power Cable for Airports.

**125-2.4 Tape.** Rubber and plastic electrical tapes shall be Scotch Electrical Tape Numbers 23 and 88 respectively, as manufactured by 3M Company or an approved equal.

**125-2.5 Cable Connections.** Cable Connections shall conform to Item L-108 Installation of Underground Cable for Airports.

**125-2.6 Retroreflective Markers.** Retroreflective markers shall be type L-853 and shall conform to the requirements of AC 150/5345-39.

**125-2.7 Runway and Taxiway Lights.** Runway and taxiway lights shall conform to the requirements of AC 150/5345-46. Lamps shall be of size and type indicated, or as required by fixture manufacturer for each lighting fixture required under this contract. Filters shall be of colors conforming to the specification for the light concerned or to the standard referenced.

Lights

Type	Class	Mode	Style	Option	Base	Filter	Transformer	Notes
L-862	2	1	N/A	4	L-867 or Stake	White/White	L-830	LED Fixture, 14" Height
L-862	2	1	N/A	4	L-867 or Stake	White/Yellow	L-830	LED Fixture, 14" Height
L-850C	2	1	1	1	L-868	White/Yellow	L-830	LED Fixture, In-pavement
L-862E	2	1	N/A	4	L-867 or Stake	Red/Green	L-830	LED Fixture, 14" Height
L-861T	2	1	N/A	4	L-867 or Stake	Blue	L-830	LED Fixture, 14" Height

**125-2.8 Runway and Taxiway Signs.** Runway and Taxiway Guidance Signs should conform to the requirements of AC 150/5345-44.

## Signs

Type	Size	Style	Class	Mode	Notes
L-858Y	2	2	1	2	
L-858R	2	2	1	2	
L-858L	2	2	1	2	
L-858B	2	2	1	2	

**125-2.9 Runway End Identifier Light (REIL).** Not required.

**125-2.10 Precision Approach Path Indicator (PAPI).** The light units for the PAPI shall meet the requirements of AC 150/5345-28, **Type L-881, Style B, Class II.**

**125-2.11 Circuit Selector Cabinet.** The circuit selector cabinet shall meet the requirements of AC 150/5345-5, Type L-847, circuit control as indicated, Class A, indoor, Rating 1, for 6.6 amperes.

**125-2.12 Light Base and Transformer Housings.** Light Base and Transformer Housings should conform to the requirements of AC 150/5345-42. Light bases shall be Type L-867, Class 1A, Size B shall be provided as indicated or as required to accommodate the fixture or device installed thereon. Base plates, cover plates, and adapter plates shall be provided to accommodate various sizes of fixtures.

**125-2.13 Isolation Transformers.** Isolation Transformers shall be Type L-830, size as required for each installation. Transformer shall conform to AC 150/5345-47.

## INSTALLATION

**125-3.1 Installation.** The Contractor shall furnish, install, connect and test all equipment, accessories, conduit, cables, wires, buses, grounds and support items necessary to ensure a complete and operable airport lighting system as specified here and shown in the plans.

The equipment installation and mounting shall comply with the requirements of the National Electrical Code and state and local code agencies having jurisdiction.

The Contractor shall install the specified equipment in accordance with the applicable advisory circulars and the details shown on the plans.

**125-3.1 Installation.** The Contractor shall furnish, install, connect and test all equipment, accessories, conduit, cables, wires, buses, grounds and support items necessary to ensure a complete and operable airport lighting system as specified here and shown in the plans.

The equipment installation and mounting shall comply with the requirements of the National Electrical Code and state and local code agencies having jurisdiction.

The Contractor shall install the specified equipment in accordance with the applicable advisory circulars and the details shown on the plans.

General Installation Requirements:

1. The electrical installation, at a minimum, must meet the NEC and local regulations.
2. The contractor must ascertain that all lighting system components furnished (including FAA approved equipment) are compatible in all respects with each other and the remainder of the new/existing system. Any non-compatible components furnished by the contractor must be

replaced at no additional cost to the airport sponsor with a similar unit that is approved by the engineer and compatible with the remainder of the airport lighting system.

3. In case the contractor elects to furnish and install airport lighting equipment requiring additional wiring, transformers, adapters, mountings, etc., to those shown on the drawings and/or listed in the specifications, any cost for these items must be incidental to the equipment cost.
4. The contractor-installed equipment (including FAA approved) must not generate any EMI in the existing and/or new communications, weather, air navigation, and ATC equipment. Any equipment generating such interference must be replaced by the contractor at no additional cost with equipment meeting the applicable specifications.
5. When a specific type, style, class, etc., of FAA approved equipment is specified only that type, style, class, etc., will be acceptable, though equipment of other types, style, class, etc., may be FAA approved.
6. Any and all instructions from the engineer to the contractor regarding changes in, or deviations from, the plans and specifications must be in writing with copies sent to the airport sponsor and the FAA field office (Airports District Office (ADO)/Airports Field Office (AFO)). The contractor must not accept any verbal instructions from the engineer regarding any changes from the plans and specifications.
7. A minimum of three copies of instruction books must be supplied with each type of equipment. For more sophisticated types of equipment, such as regulators, PAPI, REIL, etc., the instruction book must contain the following:
  - a. A detailed description of the overall equipment and its individual components.
  - b. Theory of operation including the function of each component.
  - c. Installation instructions.
  - d. Start-up instructions.
  - e. Preventative maintenance requirements.
  - f. Chart for troubleshooting.
  - g. Complete power and control detailed wiring diagram(s), showing each conductor/connection/component; "black" boxes are not acceptable. The diagram or the narrative must show voltages/currents/wave shapes at strategic locations to be used when checking and/or troubleshooting the equipment.

When the equipment has several brightness steps, these parameters must be indicated for all the different modes.
  - h. Parts list will include all major and minor components, such as resistors, diodes, etc. It must include a complete nomenclature of each component and, if applicable, the name of its manufacturer and the catalog number.
  - i. Safety instructions.

Power and Control Installation Requirements:

1. Stencil all electrical equipment to identify function, circuit voltage and phase. Where the equipment contains fuses, also stencil the fuse or fuse link ampere rating. Where the equipment does not have sufficient stenciling area, the stenciling must be done on the wall next to the unit. The letters must

be one inch (25 mm) high and painted in white or black paint to provide the highest contrast with the background. Engraved plastic nameplates may also be used with one inch (25 mm) white (black background) or black (white background) characters. All markings must be of sufficient durability to withstand the environment.

2. Color code all phase wiring by the use of colored wire insulation and/or colored tape. Where tape is used, the wire insulation must be black. Black and red must be used for single-phase, three wire systems and black, red and blue must be used for three-phase systems. Neutral conductors, size No. 6 AWG or smaller, must be identified by a continuous white or natural outer finish. Conductors larger than No. 6 AWG must be identified either by a continuous white or natural gray outer finish along its entire length or by the use of white tape at its terminations and inside accessible wireways.
3. All branch circuit conductors connected to a particular phase must be identified with the same color. The color coding must extend to the point of utilization.
4. In control wiring, the same color must be used throughout the system for the same function, such as 10%, 30%, 100% brightness control, etc.
5. All power and control circuit conductors must be copper; aluminum must not be accepted. This includes wire, cable, busses, terminals, switch/panel components, etc.
6. Low voltage (600 V) and high voltage (5000 V) conductors must be installed in separate wireways.
7. Neatly lace wiring in distribution panels, wireways, switches and pull/junction boxes.
8. The minimum size of pull/junction boxes, regardless of the quantity and the size of the conductors shown, must be as follows:
  - a. In straight pulls, the length of the box must not be less than eight times the trade diameter of the larger conduit. The total area (including the conduit cross-sectional area) of a box end must be at least three times greater than the total trade cross-sectional area of the conduits terminating at the end.
  - b. In angle or u-pulls, the distance between each conduit entry inside the box and the opposite wall of the box must not be less than six times the trade diameter of the largest conduit. This distance must be increased for additional entries by the amount of the sum of the diameters of all other conduit entries on the same wall of the box. The distance between conduit entries enclosing the same conductor must of not be less than six times the trade diameter of the largest conduit.
9. A run of conduit between terminations at equipment enclosures, square ducts and pull/junction boxes, must not contain more than the equivalent of four quarter bends (360 degrees total), including bends located immediately at the terminations. Cast, conduit type outlets must not be treated as pull/junction boxes.
10. Equipment cabinets must not be used as pull/junction boxes. Only wiring terminating at the equipment must be brought into these enclosures.
11. Splices and junction points must be permitted only in junction boxes, ducts equipped with removable covers, and at easily accessible locations.
12. Circuit breakers in power distribution panel(s) must be thermal-magnetic, molded case, permanent trip with 100-ampere, minimum, frame.
13. Dual lugs must be used where two wires, size No. 6 or larger, are to be connected to the same terminal.

14. All wall mounted equipment enclosures must be mounted on wooden mounting boards.
15. Wooden equipment mounting boards must be plywood, exterior type, 3/4 inch (19 mm) minimum thickness, both sides painted with one coat of primer and two coats of gray, oil-based paint.
16. Rigid steel conduit must be used throughout the installation unless otherwise specified. The minimum trade size must be 3/4 inch (19 mm).
17. All rigid conduit must be terminated at CCRs with a section (10 inch (254 mm) minimum) of flexible conduit.
18. Unless otherwise shown all exposed conduits must be run parallel to, or at right angles with, the lines of the structure.
19. All steel conduits, fittings, nuts, bolts, etc., must be galvanized.
20. Use conduit bushings at each conduit termination. Where No. 4 AWG or larger ungrounded wire is installed, use insulated bushings.
21. Use double lock nuts at each conduit termination. Use weather tight hubs in damp and wet locations. Sealing locknuts must not be used.
22. Wrap all primary and secondary power transformer connections with sufficient layers of insulating tape and cover with insulating varnish for full value of cable insulation voltage.
23. Unless otherwise noted, all indoor single conductor control wiring must be No. 12 AWG.
24. Both ends of each control conductor must be terminated at a terminal block. The terminal block must be of proper rating and size for the function intended and must be located in equipment enclosures or special terminal cabinets.
25. All control conductor terminators must be of the open-eye connector/screw type. Soldered, closed-eyed terminators, or terminators without connectors are not acceptable.
26. In terminal block cabinets, the minimum spacing between parallel terminal blocks must be 6 inches (152 mm). The minimum spacing between terminal block sides/ends and cabinet sides/bottom/top must be 5 inches (127 mm). The minimum spacing will be increased as required by the number of conductors. Additional spacing must be provided at conductor entrances.
27. Both ends of all control conductors must be identified as to the circuit, terminal, block, and terminal number. Only stick-on labels must be used.
28. A separate and continuous neutral conductor must be installed and connected for each breaker circuit in the power panel(s) from the neutral bar to each power/control circuit.
29. The following must apply to relay/contactors panel/enclosures:
  - a. All components must be mounted in dust proof enclosures with vertically hinged covers.
  - b. The enclosures must have ample space for the circuit components, terminal blocks, and incoming internal wiring.
  - c. All incoming/outgoing wiring must be terminated at terminal blocks.
  - d. Each terminal on terminal blocks and on circuit components must be clearly identified.
  - e. All control conductor terminations must be of the open-eye connector/screw type. Soldered, closed-eye connectors, or terminations without connectors are not acceptable.

- f. When the enclosure cover is opened, all circuit components, wiring, and terminals must be exposed and accessible without any removal of any panels, covers, etc., except those covering high voltage components.
- g. Access to, or removal of, a circuit component or terminal block will not require the removal of any other circuit component or terminal block.
- h. Each circuit component must be clearly identified indicating its corresponding number shown on the drawing and its function.
- i. A complete wiring diagram (not a block or schematic diagram) must be mounted on the inside of the cover. The diagram must represent each conductor by a separate line.
- j. The diagram must identify each circuit component and the number and color of each internal conductor and terminal.
- k. All wiring must be neatly trained and laced.
- l. Minimum wire size must be No. 12 AWG.

#### Field Lighting Installation Requirements:

1. Unless otherwise stated, all underground field power multiple and series circuit conductors (whether direct earth burial (DEB) or in duct/conduit) must be FAA approved Type L-824. Insulation voltage and size must be as specified.
2. No components of the primary circuit such as cable, connectors and transformers must be brought above ground at edge lights, signs, REIL, etc.
3. There must be no exposed power/control cables between the point where they leave the underground (DEB or L-867 bases) and where they enter the equipment (such as taxiway signs, PAPI, REIL, etc.). Enclosures. These cables must be enclosed in rigid conduit or in flexible water-tight conduit with frangible coupling(s) at the grade or the housing cover, as shown in applicable details.
4. The joints of the L-823 primary connectors must be wrapped with one layer of rubber or synthetic rubber tape and one layer of plastic tape, one half lapped, extending at least 1-1/2 inches (38 mm) on each side of the joint, as shown in Figure E-9.
5. The cable entrance into the field attached L-823 connectors must be enclosed by heat-shrinkable tubing with continuous internal adhesive as shown in Figure E-9.
6. The ID of the primary L-823 field attached connectors must match the cable OD to provide a watertight cable entrance. The entrance must be encapsulated in heat shrinkable tubing with continuous factory applied internal adhesive, as shown in Figure E-9.
7. L-823 type 11, two-conductor secondary connector must be class "A" (factory molded).
8. There must be no splices in the secondary cable(s) within the stems of a runway/taxiway edge/threshold lighting fixtures and the wireways leading to taxiway signs and PAPI/REIL equipment.
9. Electrical insulating grease must be applied within the L-823, secondary, two conductor connectors to prevent water entrance. The connectors must not be taped.
10. DEB isolation transformers must be buried at a depth of 10 inches (254 mm) on a line crossing the light and perpendicular to the runway/taxiway centerline at a location 12 inches (305 mm) from the light opposite from the runway/taxiway.

11. DEB primary connectors must be buried at a depth of 10 inches (254 mm) near the isolation transformer. They must be orientated parallel with the runway/taxiway centerline. There must be no bends in the primary cable 6 inches (152 mm), minimum, from the entrance into the field-attached primary connection.
12. A slack of 3 ft (0.9 m), minimum, must be provided in the primary cable at each transformer/connector termination. At stake-mounted lights, the slack must be loosely coiled immediately below the isolation transformer.
13. Direction of primary cables must be identified by color coding as follows when facing light with back facing pavement: cable to the left is coded red and cable to the right is coded blue, this applies to the stake-mounted lights and base-mounted lights where the base has only one entrance.
14. L-867 bases must be size B, 24" (610 mm) deep Class 1 unless otherwise noted.
15. Base-mounted frangible couplings must not have weep holes to the outside. Plugged holes are not acceptable. The coupling must have a 1/4" (6 mm) diameter minimum or equivalent opening for drainage from the space around the secondary connector into the L-867 base.
16. The elevation of the frangible coupling groove must not exceed 1-1/2" (38 mm) above the edge of the cover for base-mounted couplings or the top of the stake for stake-mounted couplings.
17. Where the frangible coupling is not an integral part of the light fixture stem or mounting leg, a bead of silicone rubber seal must be applied completely around the light stem or wireway at the frangible coupling to provide a watertight seal.
18. Tops of the stakes supporting light fixtures must be flush with the surrounding grade.
19. Plastic lighting fixture components, such as lamp heads, stems, frangible couplings, base covers, brackets, stakes, are not acceptable. L-867 plastic transformer housings are acceptable. A metal threaded fitting must be set in flange during casting process. Base cover bolts must be fabricated from 18-8 stainless steel.
20. The tolerance for the height of runway/taxiway edge lights must be  $\pm 1$  inch (25 mm). For stake-mounted lights, the specified lighting fixture height must be measured between the top of the stake and the top of the lens. For base-mounted lights, the specified lighting fixture height must be measured between the top of the base flange and the top of the lens, and includes the base cover, the frangible coupling, the stem, the lamp housing and the lens.
21. The tolerance for the lateral spacing (light lane to runway/taxiway centerline) of runway/taxiway edge lights must be  $\pm 1$  inch (25.4 mm). This also applies at intersections to lateral spacing between lights of a runway/taxiway and the intersecting runway/taxiway.
22. L-867 bases may be precast. Entrances into L-867 bases must be plugged from the inside with duct seal.
23. Galvanized/painted equipment/component surfaces must not be damaged by drilling, filing, etc. – this includes drain holes in metal transformer housings.
24. Edge light numbering tags must be facing the pavement.
25. Cable/splice/duct markers must be pre-cast concrete of the size shown. Letters/numbers/arrows for the legend to be impressed into the tops of the markers must be pre-assembled and secured in the mold before the concrete is poured. Legends inscribed by hand in wet concrete are not acceptable.

26. All underground cable runs must be identified by cable markers at 200 ft (61 m) maximum spacing with an additional marker at each change of direction of the cable run. Cable markers must be installed above the cable.
27. Locations of all DEB underground cable splice/connections, except those at isolation transformers, must be identified by splice markers. Splice markers must be placed above the splice/connections.
28. The cable and splice markers must identify the circuits to which the cables belong. For example: RWY 4-22, PAPI-4, PAPI-22.
29. Locations of ends of all underground ducts must be identified by duct markers.
30. The preferred mounting method of runway and taxiway signs is by the use of single row of legs. However, two rows will be acceptable.
31. Reference Figure E-13 and Figure E-14 for an example of a lighted sign installation.
  - a. Power to the sign must be provided through breakaway cable connectors installed within the frangible point portion of the sign's mounting legs.
  - b. There must be no above ground electrical connection between signs in a sign array.
32. Stencil horizontal and vertical aiming angles on each REIL flash head or equipment enclosure. The numerals must be black and one inch (25 mm) minimum height.
33. Stencil vertical aiming angles on the outside of each PAPI lamp housing. The numerals must be black and one inch (25 mm) minimum height.
34. All power and control cables in man/hand holes must be tagged. Use embossed stainless steel strips or tags attached at both ends to the cable by the use of UV resistant plastic straps. A minimum of two tags must be provided on each cable in a man/hand hole - one at the cable entrance, and one at the cable exit.
35. Apply a corrosion inhibiting, anti-seize compound to all screws, nuts and frangible coupling threads. If coated bolts are used per EB #83, do not apply anti-seize compound.
36. There must be no splices between the isolation transformers. L-823 connectors are allowed at transformer connections only, unless shown otherwise.
37. DEB splices in home runs must be of the cast type, unless shown otherwise.
38. Where a parallel, constant voltage PAPI system is provided, the "T" splices must be of the cast type.
39. Concrete used for slabs, footing, backfill around transformer housings, markers, etc., must be 3000 PSI, min., air-entrained.

#### Equipment Grounding Installation Requirements:

1. Ground all non-current-carrying metal parts of electrical equipment by using conductors sized and routed per NEC Handbook, Article 250.
2. All ground connections to ground rods, busses, panels, etc., must be made with pressure type solderless lugs and ground clamps. Soldered or bolt and washer type connections are not acceptable. Clean all metal surfaces before making ground connections. Exothermic welds are the preferred method of connection to a ground rod.
3. Tops of ground rods must be 6 inches (152 mm) below grade.



4. The resistance to ground of the vault grounding system with the commercial power line neutral disconnected must not exceed 10 ohms.
5. The resistance to ground of the counterpoise system, or at isolation locations, such as airport beacon must not exceed 10 ohms.

**125-3.2 Testing.** All lights shall be fully tested by continuous operation for not less than 24 hours as a completed system prior to acceptance. The test shall include operating the constant current regulator in each step not less than 10 times at the beginning and end of the 24-hour test. The fixtures shall illuminate properly during each portion of the test.

**125-3.3 Shipping and Storage.** Equipment shall be shipped in suitable packing material to prevent damage during shipping. Store and maintain equipment and materials in areas protected from weather and physical damage. Any equipment and materials, in the opinion of the RPR, damaged during construction or storage shall be replaced by the Contractor at no additional cost to the owner. Painted or galvanized surfaces that are damaged shall be repaired in accordance with the manufacturer's recommendations.

**125-3.4 Elevated and In-pavement Lights.** Water, debris, and other foreign substances shall be removed prior to installing fixture base and light.

A jig or holding device shall be used when installing each light fixture to ensure positioning to the proper elevation, alignment, level control, and azimuth control. Light fixtures shall be oriented with the light beams parallel to the runway or taxiway centerline and facing in the required direction. The outermost edge of fixture shall be level with the surrounding pavement. Surplus sealant or flexible embedding material shall be removed. The holding device shall remain in place until sealant has reached its initial set.

## METHOD OF MEASUREMENT

**125-4.1** Reflective markers will be measured by the number installed as completed units in place, ready for operation, and accepted by the RPR. Runway and taxiway lights will be measured by the number of each type installed as completed units in place, ready for operation, and accepted by the RPR. Guidance signs will be measured by the number of each type and size installed as completed units, in place, ready for operation, and accepted by the RPR. Runway End Identifier Lights shall be measured by each system installed as a completed unit in place, ready for operation, and accepted by the RPR.

Precision Approach Path Indicator shall be measured by each system installed as a completed unit, in place, ready for operation, and accepted by the RPR. Abbreviated Precision Approach Path Indicator shall be measured by each system installed as a completed unit, in place, ready for operation, and accepted by the RPR.

## BASIS OF PAYMENT

**125-5.1** Payment will be made at the Contract unit price for each complete runway or taxiway light, guidance sign, reflective marker, runway end identification light, precision approach path indicator, or abbreviated precision approach path indicator installed by the Contractor and accepted by the RPR. This payment will be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete this item.

Payment will be made under:

L-125-5.1	Runway Edge Light, L-862, LED, High Intensity, Bi-directional White/White filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in turf, complete – per each
L-125-5.2	Concrete Apron for Runway Edge Light assembly, 36-inch dia., complete – per each
L-125-5.3	Runway Edge Light, L-862, LED, High Intensity, Bi-directional White/Yellow filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in turf, complete – per each
L-125-5.4	Runway Edge Light, L-850C LED, High Intensity, Inset, Bi-directional White/Yellow filter, twelve inch (12") dia., L-868 base mounted with isolation transformer in pavement, complete – per each
L-125-5.5	Runway Threshold Light, L-862E, LED, High Intensity, Bi-directional Green/Red filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in pavement, complete – per each
L-125-5.7	Concrete Apron for Taxiway Edge Light assembly, 36-inch dia., complete – per each
L-125-5.8	Taxiway Edge Light, L-861T, LED, Medium Intensity, Bi-directional Blue filter, twelve inch (12") dia., L-867 base mounted with isolation transformer in turf, complete – per each
L-125-5.10	Concrete Foundation for L-858 Sign assembly, complete – per each
L-125-5.11	L-858, LED Mandatory Sign, Size 2, Style 2, Class 1 (3 Module) – per each
L-125-5.12	L-858, LED Guidance Sign, Size 2, Style 2, Class 1 (2 Module) – per each
L-125-5.14	PAPI, L-881, LED, Style B, Class II, 4 Box, complete – per each

### REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

#### Advisory Circulars (AC)

AC 150/5340-18	Standards for Airport Sign Systems
AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-5	Circuit Selector Switch
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits

AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-28	Precision Approach Path Indicator (PAPI) Systems
AC 150/5345-39	Specification for L-853, Runway and Taxiway Retroreflective Markers
AC 150/5345-42	Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories
AC 150/5345-44	Specification for Runway and Taxiway Signs
AC 150/5345-46	Specification for Runway and Taxiway Light Fixtures
AC 150/5345-47	Specification for Series to Series Isolation Transformers for Airport Lighting Systems
AC 150/5345-51	Specification for Discharge-Type Flashing Light Equipment
AC 150/5345-53	Airport Lighting Equipment Certification Program
Engineering Brief (EB)	
EB No. 67	Light Sources Other than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures

**END OF ITEM L-125**

**APPENDIX A: Supplemental Contract Forms****CONSENT OF SURETY TO FINAL PAYMENT**

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

Location: \_\_\_\_\_

Project #: \_\_\_\_\_

TO SPONSOR (Name and Address): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contractor: \_\_\_\_\_ Contract Date: \_\_\_\_\_

In accordance with the provisions of the Contract between the Sponsor and the Contractor as indicated above, the

(Insert name and address of Surety) \_\_\_\_\_, Surety,

on bond of

(Insert name and address of Contractor) \_\_\_\_\_, Contractor,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of any of its obligations to

(Insert name and address of Sponsor) \_\_\_\_\_, Sponsor,

as set forth in the said Surety's bond.

IN WITNESS WHEREOF,

The Surety has hereunto set its hand on this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

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

Attest:

(Seal)

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

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## CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS

<b>PROJECT:</b>	<b>SPONSORS' PROJECT NUMBER:</b>	SPONSOR: <input type="checkbox"/>
		ARCHITECT: <input type="checkbox"/>
	<b>CONTRACT FOR:</b> General Construction	CONTRACTOR: <input type="checkbox"/>
<b>TO SPONSOR:</b>	<b>CONTRACT DATED:</b>	SURETY: <input type="checkbox"/>
		OTHER: <input type="checkbox"/>

**STATE OF:** GEORGIA

**COUNTY OF:**

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Sponsor or Sponsor's property might in any way be held responsible or encumbered.

**EXCEPTIONS:**

**SUPPORTING DOCUMENTS ATTACHED HERETO:**

1. Consent of Surety to Final Payment.  
Whenever Surety is involved, Consent of Surety is required. AIA Document G707, Consent of Surety, may be used for this purpose.

Indicate Attachment: ☐ Yes ☐ No

*The following supporting documents should be attached hereto if required by the Sponsor:*

1. Contractor Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Sponsor, accompanied by a list thereof.
3. Contractor's Affidavit of Release of Liens (AIA Document G706A).

**CONTRACTOR:**

BY: \_\_\_\_\_  
(Signature of authorized representative)

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

Subscribed and sworn to before me on this date:

Notary Public:  
My Commission Expires:

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**CONTRACTOR'S FINAL RELEASE AND WAIVER OF LIEN**Project / SponsorContractor

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

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

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

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

\_\_\_\_\_  
City State Zip Code\_\_\_\_\_  
City State Zip Code

Sponsor: \_\_\_\_\_ Contract Date: \_\_\_\_\_

**TO ALL WHOM IT MAY CONCERN:**

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned Contractor hereby waives, discharges, and releases any and all liens, claims, and rights to liens against the above-mentioned project, and any and all other property owned by or the title to which is in the name of the above-referenced Sponsor and against any and all funds of the Sponsor appropriated or available for the construction of said project, and any and all warrants drawn upon or issued against any such funds or monies, which the undersigned Contractor may have or may hereafter acquire or possess as a result of the furnishing of labor, materials, and/or equipment, and the performance of Work by the Contractor on or in connection with said project, whether under and pursuant to the above-mentioned contract between the Contractor and the Sponsor pertaining to said project or otherwise, and which said liens, claims or rights of lien may arise and exist.

The undersigned further hereby acknowledges that the sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_) constitutes the entire unpaid balance due the undersigned in connection with said project whether under said contract or otherwise and that the payment of said sum to the Contractor will constitute payment in full and will fully satisfy any and all liens, claims, and demands which the Contractor may have or assert against the Sponsor in connection with said contract or project.

Notary Public:  
My Commission Expires:

Dated this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

BY: \_\_\_\_\_  
(Signature of authorized representative)

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



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**APPENDIX B: Erosion and Sediment Control Forms**  
**Daily Rainfall Log**

**Project Name:**

\_\_\_\_\_

**Project Location:**

-

**Month:**

-

**Year:**

**Type of Device Used to Measure Rainfall:**

\_\_\_\_\_

**Device Location:**

\_\_\_\_\_

**Daily Rainfall Monitoring Data**

Date	Rainfall Amount, Inches	Time	Reported By

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**B.M.P Inspection Report**

Project: \_\_\_\_\_ Inspection Date: \_\_\_\_\_

Time: \_\_\_\_\_

Type of Inspection: Routine \_\_\_\_\_ Re-Inspection \_\_\_\_\_

Stage of Construction: BMP Installation/Clearing Grading Curb/Gutter Building Other

Weather/Soil Condition: Raining/Wet Light Rain/Medium Clear/Dry

Erosion Device Inspected	Status		
Bf: Buffer Zone	Passed	Failed	Comment
Ds1: Soil Stabilization: mulch only 6" to 10"	Passed	Failed	Comment
Ds2: Soil Stabilization: (temp. seeding)	Passed	Failed	Comment
Ds3: Soil Stabilization: (permanent vegetation)	Passed	Failed	Comment
Ds4: Soil Stabilization: (soding)	Passed	Failed	Comment
Ga: Gablon	Passed	Failed	Comment
Du: Dust Control	Passed	Failed	Comment
Cd: Check Dams: rock/other	Passed	Failed	Comment
Cb: Channel Stabilization: (rip rap or vegetation)	Passed	Failed	Comment
Co: Construction Exit Pad	Passed	Failed	Comment
Mb: Geotextiles (matting Blanket)	Passed	Failed	Comment
Rd: Rock Filter Dam	Passed	Failed	Comment
Rt: Retrofit: Detention/Sediment Pond	Passed	Failed	Comment
Sd1: Sediment Barrier	Passed	Failed	Comment
Sd2: Inlet Sediment Trap	Passed	Failed	Comment
Sd3: Temporary Sediment Basin	Passed	Failed	Comment
Sr: Temporary Stream Crossing	Passed	Failed	Comment
St: Storm Drain Outlet Protection	Passed	Failed	Comment
Dn1: Temporary Down Drain Structure	Passed	Failed	Comment
Sb: Stream Bank Stabilization	Passed	Failed	Comment
Sd1-C: Silt Fence	Passed	Failed	Comment
Wt: Veg. Waterway or St/Water Conv. Channel	Passed	Failed	Comment
Tree Preservation Fencing	Passed	Failed	Comment
Trash	Passed	Failed	Comment

1. What action(s) was taken for any failed activities listed above? Verbal Notification: \_\_\_\_\_

Written Notification: \_\_\_\_\_ Stop Work Order: \_\_\_\_\_ Citation #: \_\_\_\_\_

2. What time frame was given to comply with the above violation: Days: \_\_\_\_\_ Other: \_\_\_\_\_

3. Have any complaints or violations been issued on this project previously? Yes: \_\_\_\_\_  
No: \_\_\_\_\_

4. If yes, explain  
violations/fines: \_\_\_\_\_  
\_\_\_\_\_

5. Are there state waters present? Yes: \_\_\_\_\_ No: \_\_\_\_\_

6. Were all permits posted? Yes: \_\_\_\_\_ No: \_\_\_\_\_

7. Is an approved E&S plan on site? Yes: \_\_\_\_\_ No: \_\_\_\_\_

Comments:

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

# Site Inspection Report

## Erosion and Sedimentation Inspection Report

Maintain Reports on-site

<b>Site:</b>	<b>Date:</b>	<b>Time:</b>
<b>Inspector:</b>	<b>Accompanied By:</b>	
<b>Stage of Construction:</b>		
<b>Site:</b>		
<b>Observation:</b>		
<b>Recommendations:</b>		
<b>Contractors's Corrective Action (and Date):</b>		
<b>Site:</b>		
<b>Observation:</b>		
<b>Recommendations:</b>		
<b>Contractors's Corrective Action (and Date):</b>		

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## Inspection Summary

Site: \_\_\_\_\_ LDA No. \_\_\_\_\_

Map Site	Violation	First Date	Date Corrected



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## Daily Inspection Report

*Inspection performed by certified personnel each day construction activity occurs on-site*

Project Information	
Date:	Project Name:
Project Location:	
Inspection Observations	
Rainfall within past 24 hours (inches):	Is rainfall greater than 0.5"? Inspection Required <input type="checkbox"/>
Inspection Observations	
<b>Petroleum Product Storage Areas:</b> Are all of the temporary and permanent controls contained in Plan in place? <input type="checkbox"/> Yes <input type="checkbox"/> No If no, describe the location(s) of deficiencies and corrective actions that must be taken.	
<b>Vehicle Entrances and Exits:</b> Is there tracking of sediment from locations where vehicles enter and leave the project? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe the location(s) and the corrective actions that must be taken.	
Other Observations	
Is an Erosion, Sedimentation and Pollution Control Plan revision required? <input type="checkbox"/> Yes <input type="checkbox"/> No      Date of revision:	
Corrective Actions and Date:	

\_\_\_\_\_  
Signature of Certified Personnel

\_\_\_\_\_  
Printed Name of Certified Personnel

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## Weekly Inspection Report

***Inspection performed by certified personnel at least once every seven calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater***

### Project Information

Date:	Project Name:
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Project Location:
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Name of Inspector:
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### Inspection Event

Regular weekly inspection: <input type="checkbox"/>	Inspection within 24 hours of 0.5" storm event <input type="checkbox"/>
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### Inspection Observations

#### **Disturbed areas that have not undergone final stabilization:**

Are all of the temporary and permanent controls contained in Plan in place and properly maintained? ☐ Yes ☐ No  
If no, describe the location(s) of deficiencies and corrective actions that must be taken.

Corrective Action Taken and Date:

#### **Material storage areas exposed to precipitation:**

Are all of the temporary and permanent controls contained in Plan in place and properly maintained? ☐ Yes ☐ No  
If no, describe the location(s) of deficiencies and corrective actions that must be taken.

Corrective Action Taken and Date:

#### **Discharge locations or points.**

Are erosion control measures preventing impacts to receiving waters? ☐ Yes ☐ No  
If no, describe observations:

**Structural control measures:**

Are all of the temporary and permanent controls contained in Plan in place and properly maintained? ☐ Yes ☐ No  
If no, describe the location(s) of deficiencies and corrective actions that must be taken.

Control Measures	Location	Deficiency	Date Corrected

Other Observations:

**Is an Erosion, Sedimentation and**

**Pollution Control Plan revision required?**

☐ Yes ☐ No

Date of revision:

\_\_\_\_\_  
Signature of Certified Personnel

\_\_\_\_\_  
Printed Name of Certified Personnel

## Monthly Inspection Report

*Inspection performed by certified personnel at least once per month*

<b>Project Information</b>	
Date:	Project Name:
Project Location:	
<b>Inspection Observations</b>	
Rainfall within past 24 hours (inches):	Is rainfall greater than 0.5"? Inspection Required <input type="checkbox"/>
<b>Inspection Observations</b>	
<p>Areas that have undergone final stabilization:</p> <p>Are all permanent stabilization controls contained in Plan in place? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, describe the location(s) of deficiencies and corrective actions that must be taken.</p>	
<p>Other observations:</p> <p>Are pollutants entering the drainage system or receiving waters? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, describe the location(s) and the corrective actions that must be taken.</p> <p>Are all erosion and sediment control measures operating properly? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, describe the location(s) and the corrective actions that must be taken.</p>	
Other Observations	
<p>Is an Erosion, Sedimentation and Pollution Control Plan revision required? <input type="checkbox"/> Yes <input type="checkbox"/> No      Date of revision:</p>	
Corrective Actions and Date:	

\_\_\_\_\_  
Signature of Certified Personnel

\_\_\_\_\_  
Printed Name of Certified Personnel

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## Stormwater Monitoring Records

Month: \_\_\_\_\_ Year: \_\_\_\_\_

Sheet \_\_\_\_ of \_\_\_\_

Submit to EPD by 15th of Following Month

Project Name: \_\_\_\_\_ Project Location: \_\_\_\_\_

Date Sampled	Rainfall Amount, Inches	Exact Location of Samples	Time Sampled	Sampling Technique Manual or Automatic Grab	Sampled By	Date of Analysis	Time of Analysis	Analyzed By	Analytical Method	Results (NTU)



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## Storm Water Discharge Data

Site: \_\_\_\_\_ LDA No. \_\_\_\_\_

Date	Rainfall (in.)	Location	Reading (NTU)	Comments

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