**PURCHASING**

**July 10, 2026**

**MEMO TO:** Prospective Bidders

**FROM:** Kimberly Toon, Purchasing Manager

**SUBJECT:** **Addendum #3:** Rehabilitation of Taxiway Foxtrot and Golf Project – Re-Advertisement

**DUE DATE AND TIME:** **JULY 16, 2026; 10:00 a.m.**

1. The Bid Documents are hereby modified by this Addendum #3 dated July 10, 2026. To include the following changes:

**SPECIFICATIONS:**

a. **L-125 - Installation of Airport Lighting Systems**
   i. **Item L-125-8 ADB CCR Re-Calibration allowance will be $15,000.**
b. **Please acknowledge Addendum 01 and Addendum 02 from previous bid advertisement. (attached)**

2. The foregoing changes shall be incorporated in the Bid Documents, and a copy of the Addendum #3, signed by the Bidder, must accompany the Bid to indicate the Bidder's familiarity with the changes.

**BIDDER'S QUESTIONS:**

1. *Your allowance for ADB Safegate to Recalibrate CCRs. Has no allowance cost. ADB has no allowance cost in their quote to contractors. Are we just supposed to put zero in this line item?*
   a. **Item L-125-8 ADB CCR Re-Calibration allowance cost will be $15,000**

Attachments: Attendance Sheet from Previous Bid Opening (07/09/2026)

**Bidder Acknowledgement:**

Bidder Name (Print):_____

Bidder Signature:_____

Date of Signature:_____

FAYETTEVILLE NC
AMERICA'S CAN DO CITY

**PURCHASING**

**June 23, 2026**

**MEMO TO:** Prospective Bidders

**FROM:** Kimberly Toon, Purchasing Manager

**SUBJECT:** **Addendum #1:** Rehabilitation of Taxiway Foxtrot and Golf Project

**DUE DATE AND TIME:** **JULY 09, 2026; 2:00 p.m.**

1. The Bid Documents are hereby modified by this Addendum #1 dated June 23, 2026. To include the following:

    a. **Pre-Bid Meeting attendance sheets and Pre-Bid Meeting presentation from the Pre-Bid Meeting on June 16, 2026 at 10:00 AM EST has been added.**

2. The foregoing changes shall be incorporated in the Bid Documents, and a copy of the Addendum #1, signed by the Bidder, must accompany the Bid to indicate the Bidder's familiarity with the changes.

**ATTACHMENTS**: Pre-Bid meeting Attendance Sheets, Pre-Bid Meeting Presentation

**Bidder Acknowledgement:**

Bidder Name (Print):_____

Bidder Signature:_____

Date of Signature:_____

## Meeting Attendance

RS & H, Inc.
*Architectural, Engineering, Planning and Environmental Services*

**Date:** Tuesday, June 16, 2026
**Project Number:** 1003-1830-005
**Project Name:** Rehabilitation of Taxiways Foxtrot and Golf

**Place:** 400 Airport Road
Fayetteville, NC 28306
Boeing Conference Room (1st Floor-Airport)

**Time:** 10:00 AM EST

**Subject:** Pre-Bid Meeting

| NAME | ORGANIZATION | PHONE # | EMAIL |
|---|---|---|---|
| Tarryn Little | RS&H | 919-926-4103 | Tarryn.Little@rsandh.com |
| Ella Gersack | RS&H | 919-926-4136 | Ella.Gersack@rsandh.com |
| Tobias Horne | Dickerson Infrastructure | 704 345 1867 | thorne@dfifl.com |
| Benjamin Reynolds | Dickerson | ~~331~~ 336-244-9062 | Breynolds@dfifl.com |
| Will Vest | ZC Grading/CM | 336-749-9231 | will@zcgrading.com |
| Scotty Scott | Barnhill Contracting Co | 910-624-3108 | sscott@barnhillcontracting.com |
| Lance Bullard | Barnhill Contracting | 910 880 4436 | lbullard@barnhillcontracting.com |
| Chip Barnes | RNC | 919-710-2926 | cbarnes@riftonburg.com |
| Grayson Taylor | Aviator Paving | 919-815-1073 | grayson@aviatorpaving.com |
| Will Leland | Barnhill Contracting | 252 824 8295 | wleland@barnhillcontracting.com |

| NAME | ORGANIZATION | PHONE | EMAIL |
|---|---|---|---|
| Davis Byrd | Highland Paving | 910 214 2018 | dbyrd@highlandpaving.com |
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# Meeting Attendance

RS & H, Inc.
*Architectural, Engineering, Planning and Environmental Services*

**Date:** Tuesday, June 16, 2026
**Project Number:** 1003-1830-005
**Project Name:** Rehabilitation of Taxiways Foxtrot and Golf

**Place:** 400 Airport Road
Fayetteville, NC 28306
Boeing Conference Room (1st Floor-Airport)

**Time:** 10:00 AM EST

**Subject:** Pre-Bid Meeting

| NAME | ORGANIZATION | PHONE # | EMAIL |
|---|---|---|---|
| Tanya Hazlett | City of Fayetteville | 910-433-1266 | TanyaHazlett@FayettevilleNC.Gov |
| Walter Lennon | City of Fayetteville | 910-433-1222 | WalterLennon@FayettevilleNC.Gov |
| Mike Sedlock | Fred Smith Company | 919-422-1573 | msedlock@fredsmithcompany.net |
| Wesley Bolton | FAA | 901-322-8163 | Wesley.J.Bolton@faa.gov |
| Larry Pierce | Rifenburg Construction | 919-691-3616 | lpierce@rifenburg.com |
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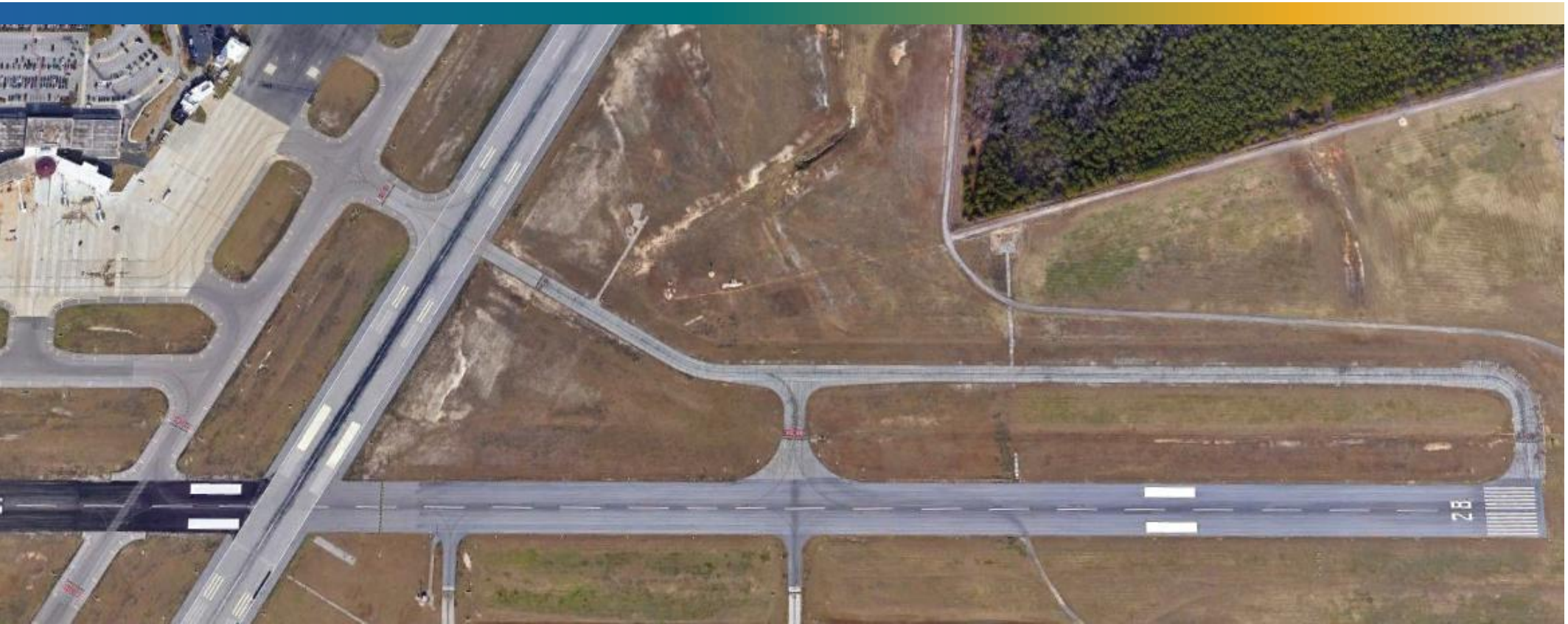
June 16, 2026
10:00 AM

# Rehabilitation of Taxiway Foxtrot and Golf Pre-Bid Meeting



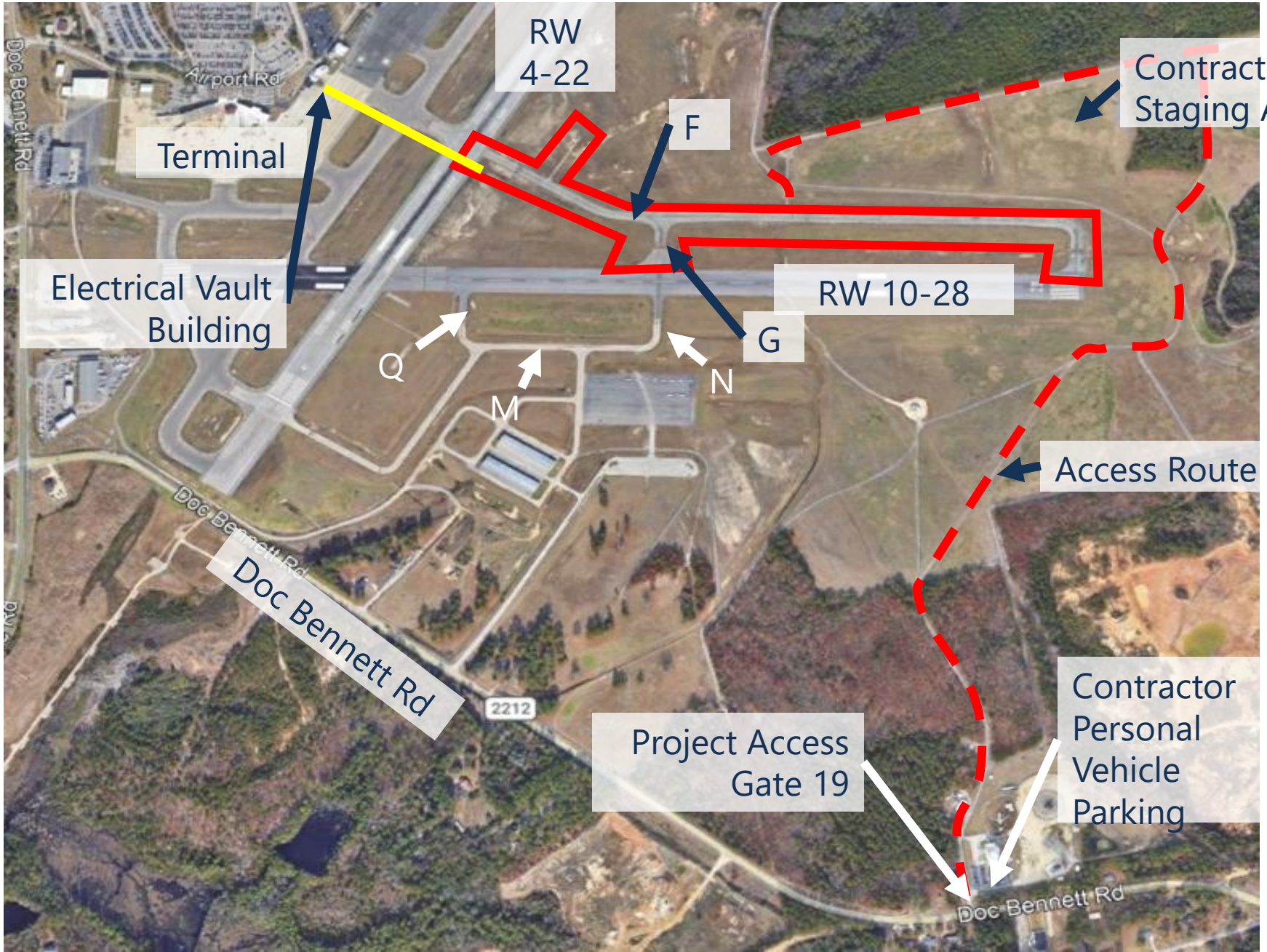
# Pre-Bid Meeting Agenda

1. Introduction
2. Project Location
3. Notice and Instruction to Bidders
4. Schedule
5. Small Business Program
6. Project Overview/ Scope
7. Q/A

# Introduction

- Andrew LaGala – Airport Director
- Deontae Watson – Deputy Airport Director
- Tarryn Little – Project Manager
- Ella Gersack – Engineering Associate

# Project Location



# Notice and Instructions to Bidders

- **Advertisement Issued:**
  June 5, 2026
- **Bids Must Be Submitted by:**
  2:00 pm on July 9, 2026.
- **Location:** 400 Airport Road Fayetteville, NC 28306 Boeing Conference Room (1st Floor-Airport)
- **Plans and Specifications:** Downloadable in PDF format from https://www.fayettevillenc.gov/City-Departments/Finance/Purchasing/Bid-Opportunities
- All Addenda will be downloadable in PDF format from https://www.fayettevillenc.gov/City-Departments/Finance/Purchasing/Bid-Opportunities

# Notice and Instructions to Bidders

- Bid Security 5%
- Performance and Payment Bonds: 100% of the Contract Amount
- Small Business Goal: 0%
- **Submit Questions on Solicitation by:**
  5:00 pm on June 24, 2026
  To Ella Gersack, Engineering Associate RS&H, at
  **Ella.Gersack@rsandh.com**

# Bid Submission – Mailing or Shipping Bid Packages

- Bids may be mailed to the City Purchasing Office, **Attn: Kimberly Toon, Purchasing Manager, 433 Hay Street, Fayetteville, NC 28301**
  - Bids may be delivered in person or by express mail to the same address

**Bids should be sealed and on the "from" label include:**

- Project number
- Project Title
- Bidder's Name
- Address
- Contractor's license number and status

- **Bids Received:** 2:00 pm on July 9, 2026.
- **Bid Opening Location:** 400 Airport Road Fayetteville, NC 28306 Boeing Conference Room (1st Floor-Airport)

# Schedule

- **Advertisement Issued:**
  June 5, 2026
- **Submit Questions on Solicitation by:**
  5:00 pm on June 24, 2026
  To Ella Gersack, Engineering Associate RS&H, at
  **Ella.Gersack@rsandh.com**
- **Bids Must Be Submitted by:**
  2:00 pm on July 9, 2026.
- **Estimated Construction Start:** September 2026

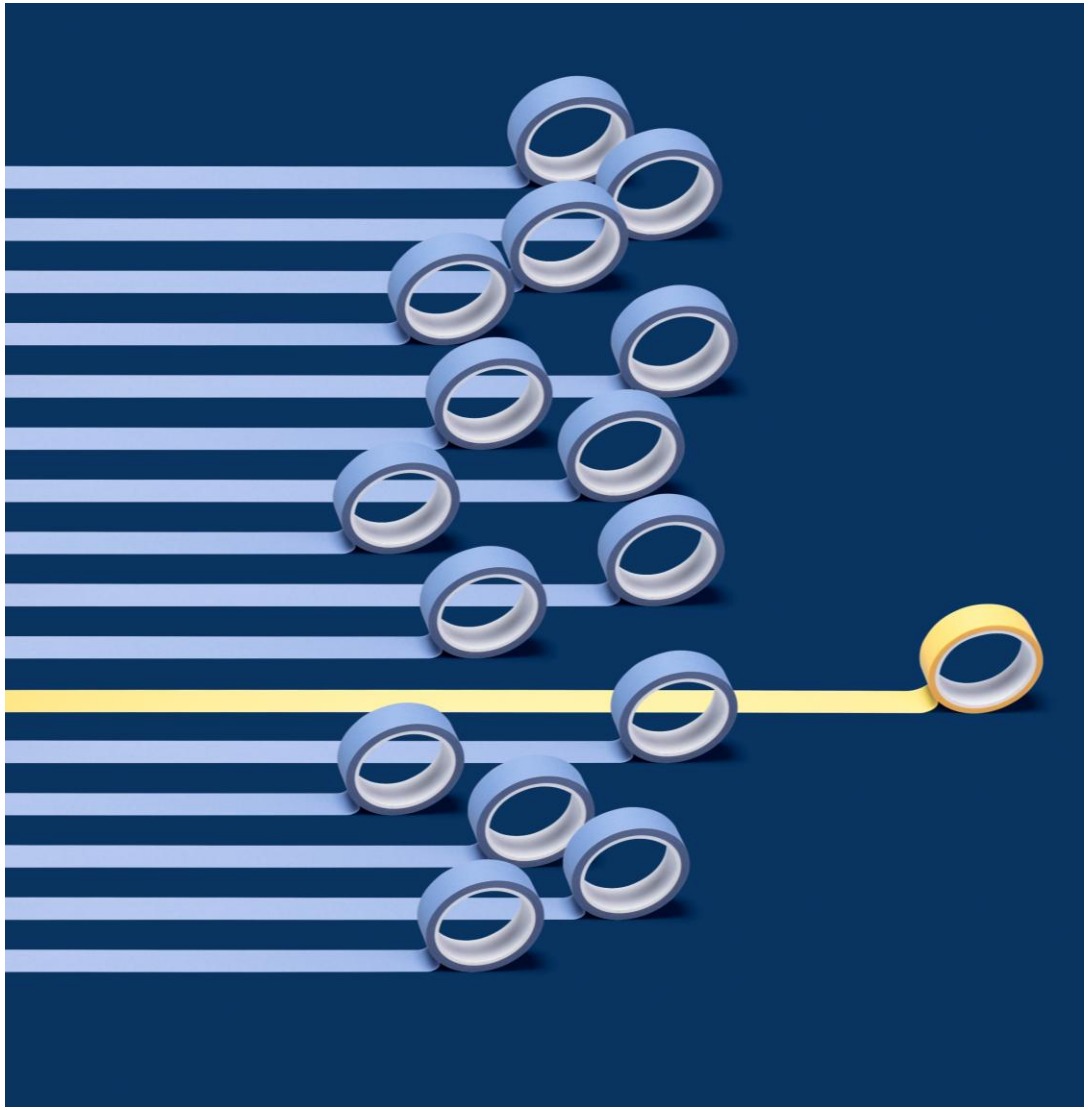
# Small Business Program

# Small Business Program

- Open to any business that meets the size standard
- An SDBE is a business concern that is small as defined by applicable SBA size standards or City thresholds for the relevant NAICS code, and owned and controlled by individuals who have experienced economic disadvantage — without regard to race, gender, or ethnicity.
- The City of Fayetteville is committed to broadening economic opportunity by encouraging the participation of Small Disadvantaged Business Enterprises (SDBEs) in City-funded contracts.

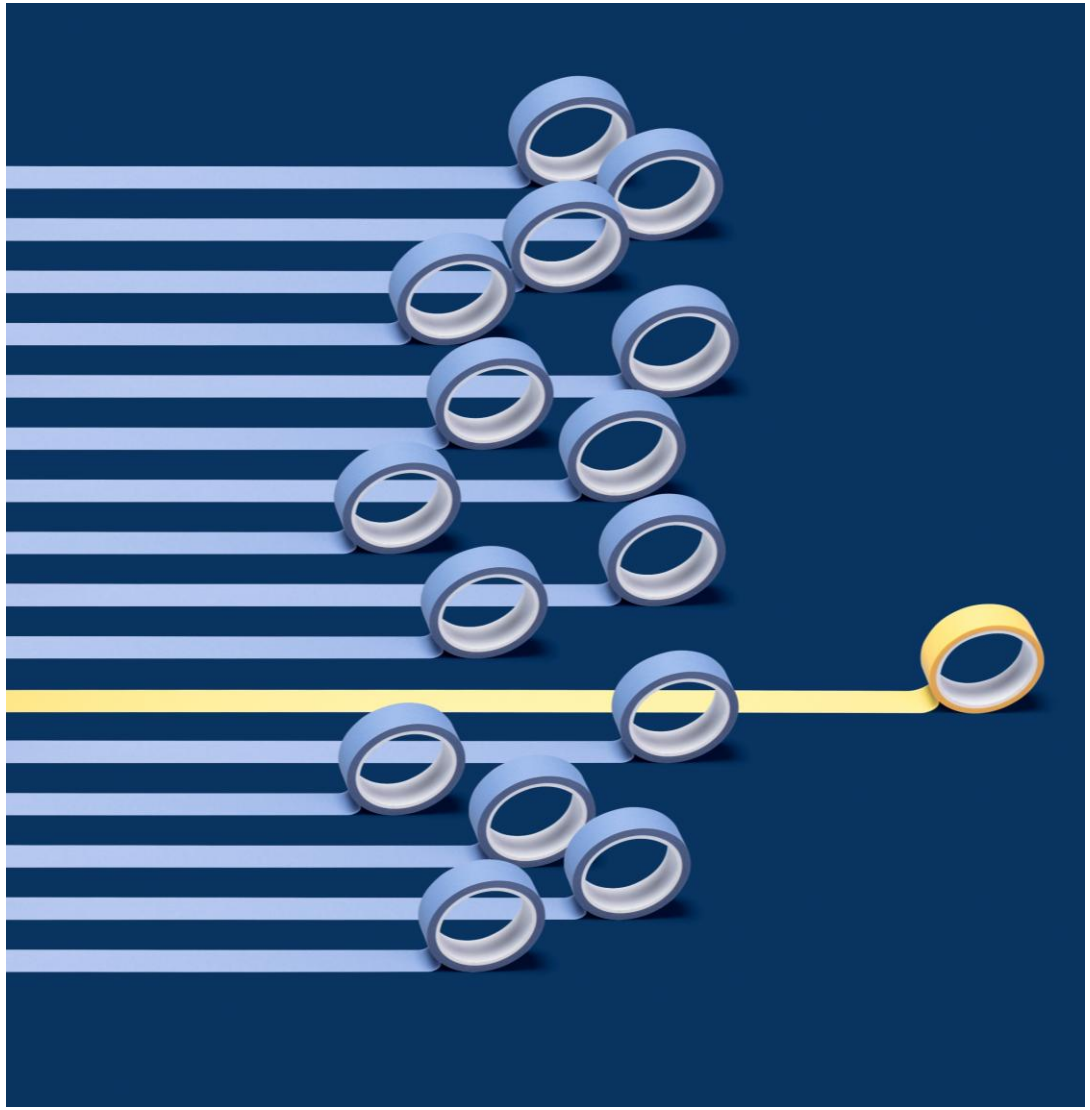
# Small Business Goal

- **Compliance to all SDBE rules and regulations is required.**
- The contractor is expected to submit all forms and documents associated with the SDBE program.
- **The SDBE goal for this project:** 0%



# How to Find Certified Firms

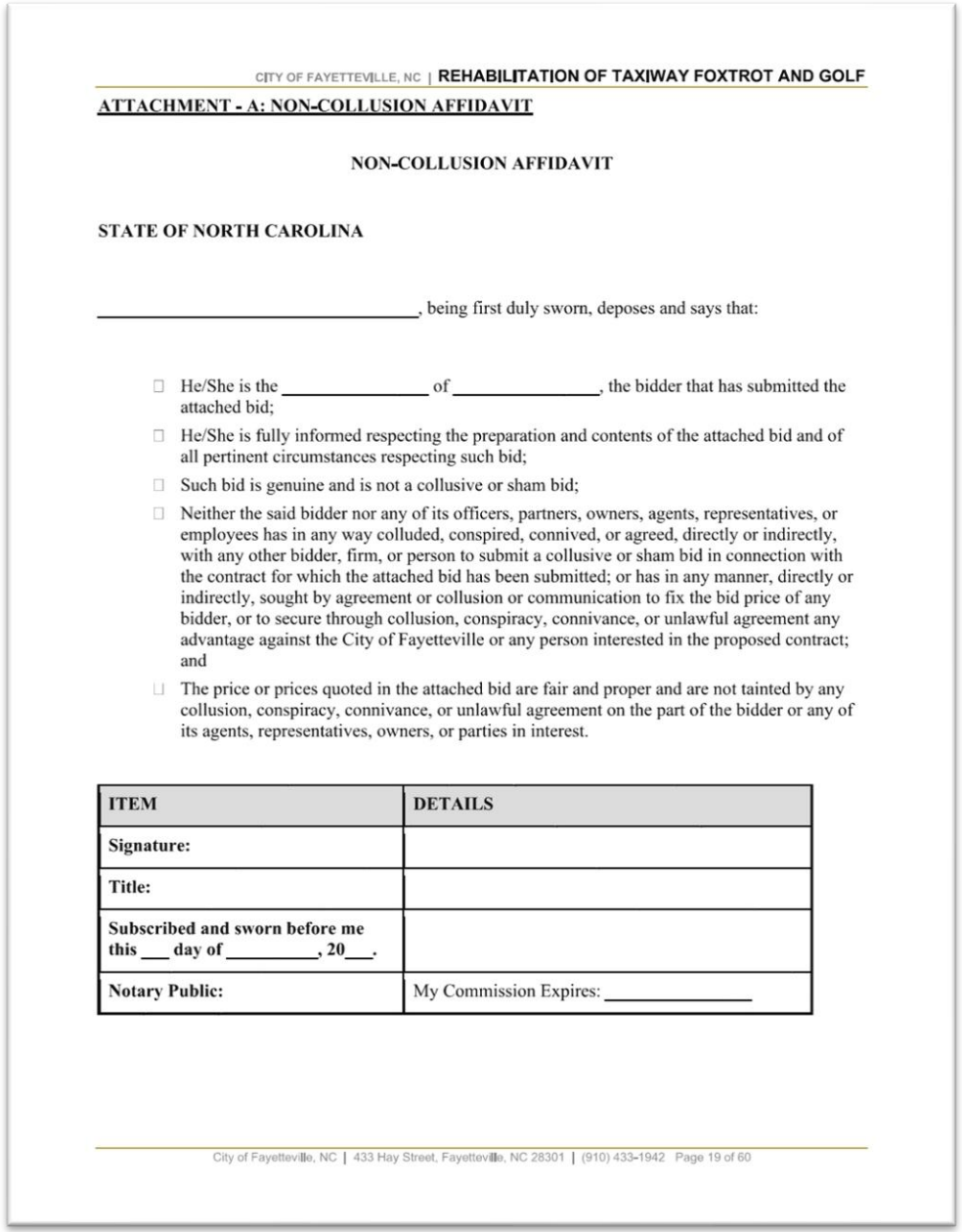
- To search for certified SDBE firms, contact the City of Fayetteville Purchasing Division or visit: www.fayettevillenc.gov/purchasing



# Required Bid Forms

# Attachment A: Signed Non-Collusion Affidavit

- Indicates that the contractor is fully informed respecting the preparation and contents of the attached bid
- Confirms bid is genuine and is not a collusive bid
- Confirms the price or prices quoted in the bid are fair and proper and are not tainted by any collusion





ATTACHMENT - A: NON-COLLUSION AFFIDAVIT

**NON-COLLUSION AFFIDAVIT**

**STATE OF NORTH CAROLINA**

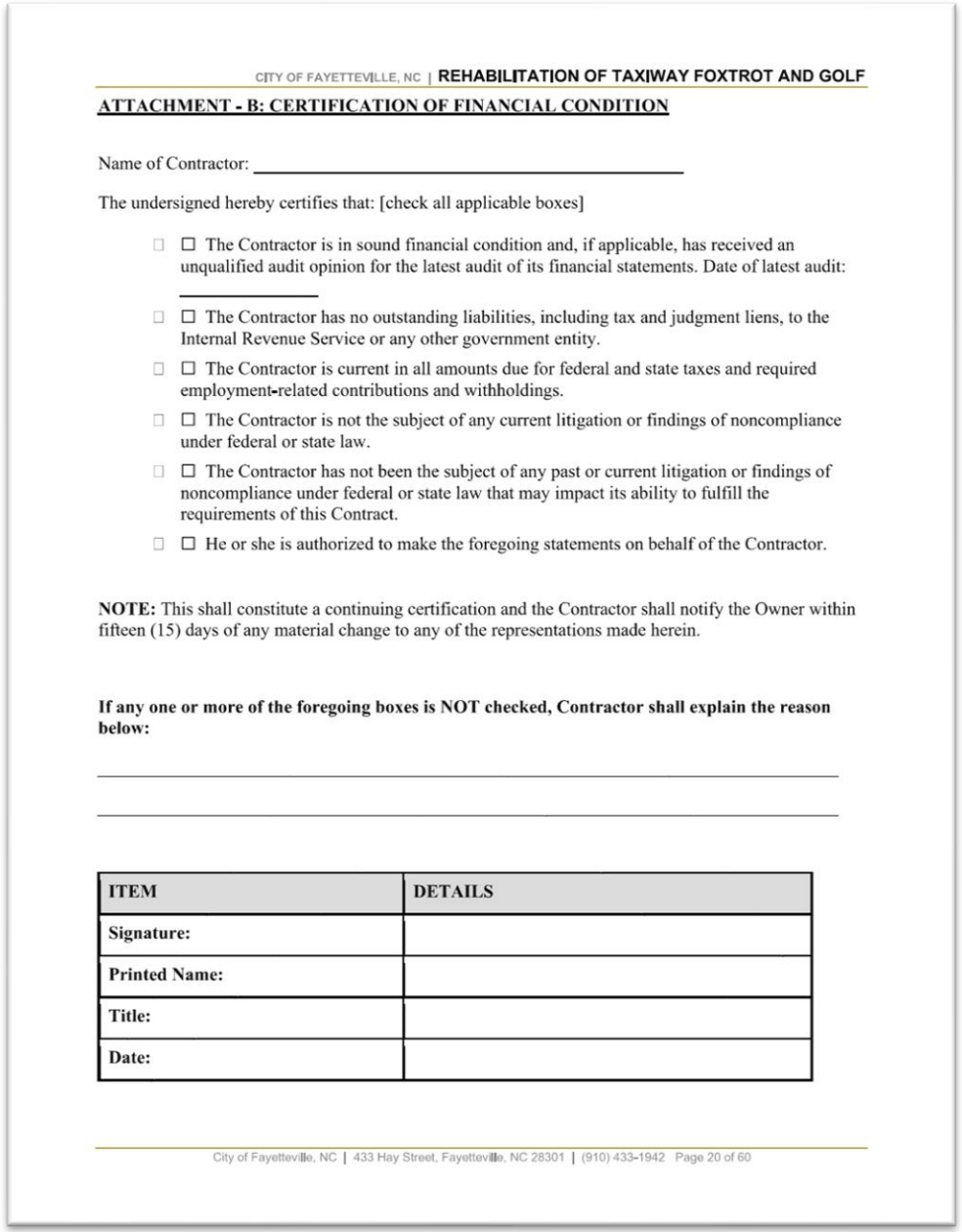
_____, being first duly sworn, deposes and says that:

- ☐ He/She is the _____ of _____, the bidder that has submitted the attached bid;
- ☐ He/She is fully informed respecting the preparation and contents of the attached bid and of all pertinent circumstances respecting such bid;
- ☐ Such bid is genuine and is not a collusive or sham bid;
- ☐ Neither the said bidder nor any of its officers, partners, owners, agents, representatives, or employees has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other bidder, firm, or person to submit a collusive or sham bid in connection with the contract for which the attached bid has been submitted; or has in any manner, directly or indirectly, sought by agreement or collusion or communication to fix the bid price of any bidder, or to secure through collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of Fayetteville or any person interested in the proposed contract; and
- ☐ The price or prices quoted in the attached bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the bidder or any of its agents, representatives, owners, or parties in interest.

| ITEM | DETAILS |
|---|---|
| **Signature:** | |
| **Title:** | |
| **Subscribed and sworn before me this ___ day of _____, 20___.** | |
| **Notary Public:** | My Commission Expires: _____ |

# Attachment B: Certification of Financial Condition

- Indicates that the contractor is in sound financial condition and has no outstanding liabilities





**ATTACHMENT - B: CERTIFICATION OF FINANCIAL CONDITION**

Name of Contractor: _____

The undersigned hereby certifies that: [check all applicable boxes]

- ☐ The Contractor is in sound financial condition and, if applicable, has received an unqualified audit opinion for the latest audit of its financial statements. Date of latest audit: _____
- ☐ The Contractor has no outstanding liabilities, including tax and judgment liens, to the Internal Revenue Service or any other government entity.
- ☐ The Contractor is current in all amounts due for federal and state taxes and required employment-related contributions and withholdings.
- ☐ The Contractor is not the subject of any current litigation or findings of noncompliance under federal or state law.
- ☐ The Contractor has not been the subject of any past or current litigation or findings of noncompliance under federal or state law that may impact its ability to fulfill the requirements of this Contract.
- ☐ He or she is authorized to make the foregoing statements on behalf of the Contractor.

**NOTE:** This shall constitute a continuing certification and the Contractor shall notify the Owner within fifteen (15) days of any material change to any of the representations made herein.

**If any one or more of the foregoing boxes is NOT checked, Contractor shall explain the reason below:**

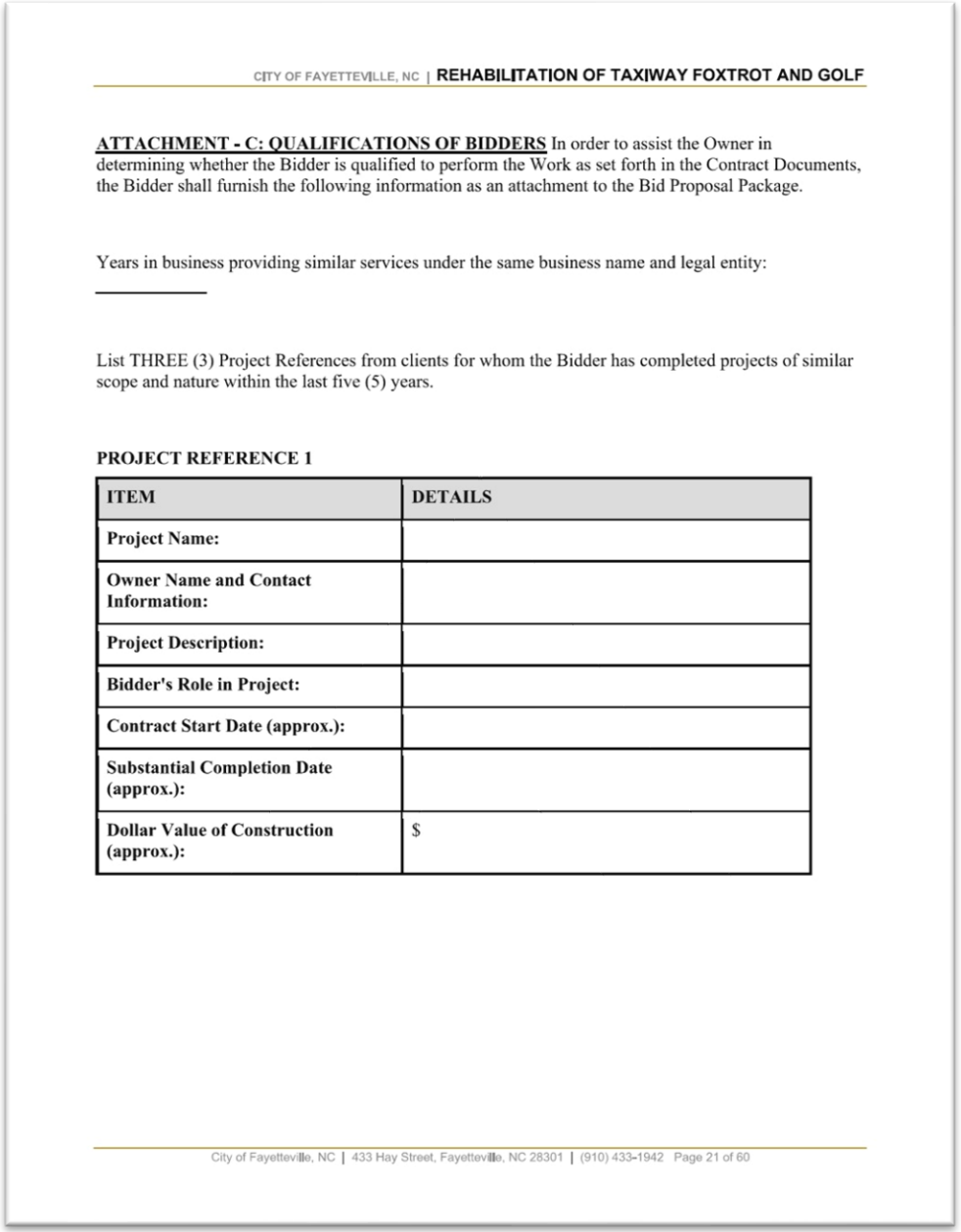
_____

_____

| ITEM | DETAILS |
|---|---|
| **Signature:** | |
| **Printed Name:** | |
| **Title:** | |
| **Date:** | |

# Attachment C: Qualifications of Bidders - 3 references

- Provide the number of years in business providing similar services under the same business name and legal entity
- Provide three (3) Project References from clients for whom the Bidder has completed projects of similar scope and nature within the last five (5) years.





**ATTACHMENT - C: QUALIFICATIONS OF BIDDERS** In order to assist the Owner in determining whether the Bidder is qualified to perform the Work as set forth in the Contract Documents, the Bidder shall furnish the following information as an attachment to the Bid Proposal Package.

Years in business providing similar services under the same business name and legal entity: _____

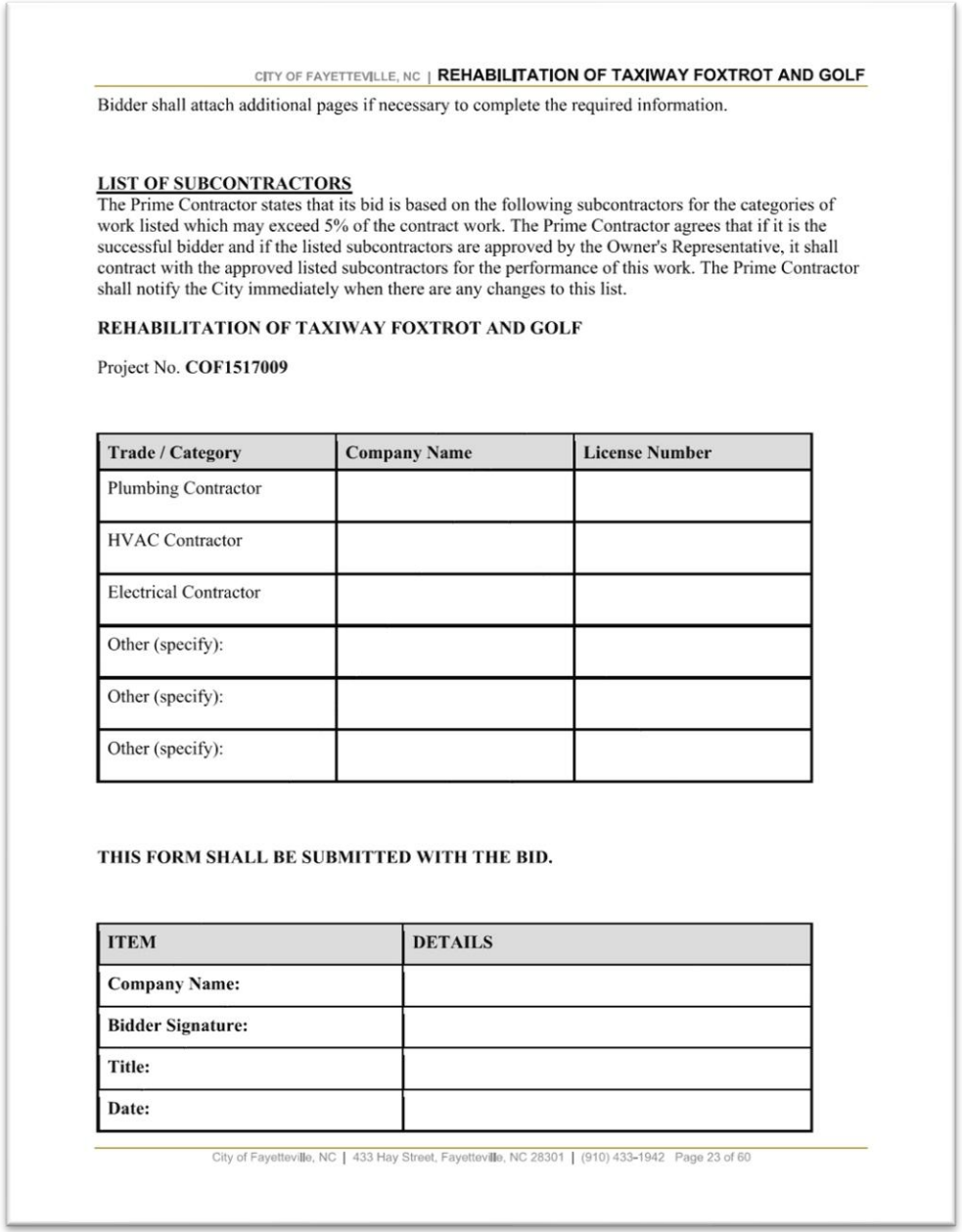
List THREE (3) Project References from clients for whom the Bidder has completed projects of similar scope and nature within the last five (5) years.

**PROJECT REFERENCE 1**

| ITEM | DETAILS |
|---|---|
| **Project Name:** | |
| **Owner Name and Contact Information:** | |
| **Project Description:** | |
| **Bidder's Role in Project:** | |
| **Contract Start Date (approx.):** | |
| **Substantial Completion Date (approx.):** | |
| **Dollar Value of Construction (approx.):** | $ |

# List of Subcontractors

- Provide list of subcontractors for the categories of work listed which may exceed 5% of the contract work





Bidder shall attach additional pages if necessary to complete the required information.

**LIST OF SUBCONTRACTORS**

The Prime Contractor states that its bid is based on the following subcontractors for the categories of work listed which may exceed 5% of the contract work. The Prime Contractor agrees that if it is the successful bidder and if the listed subcontractors are approved by the Owner's Representative, it shall contract with the approved listed subcontractors for the performance of this work. The Prime Contractor shall notify the City immediately when there are any changes to this list.

**REHABILITATION OF TAXIWAY FOXTROT AND GOLF**

Project No. **COF1517009**

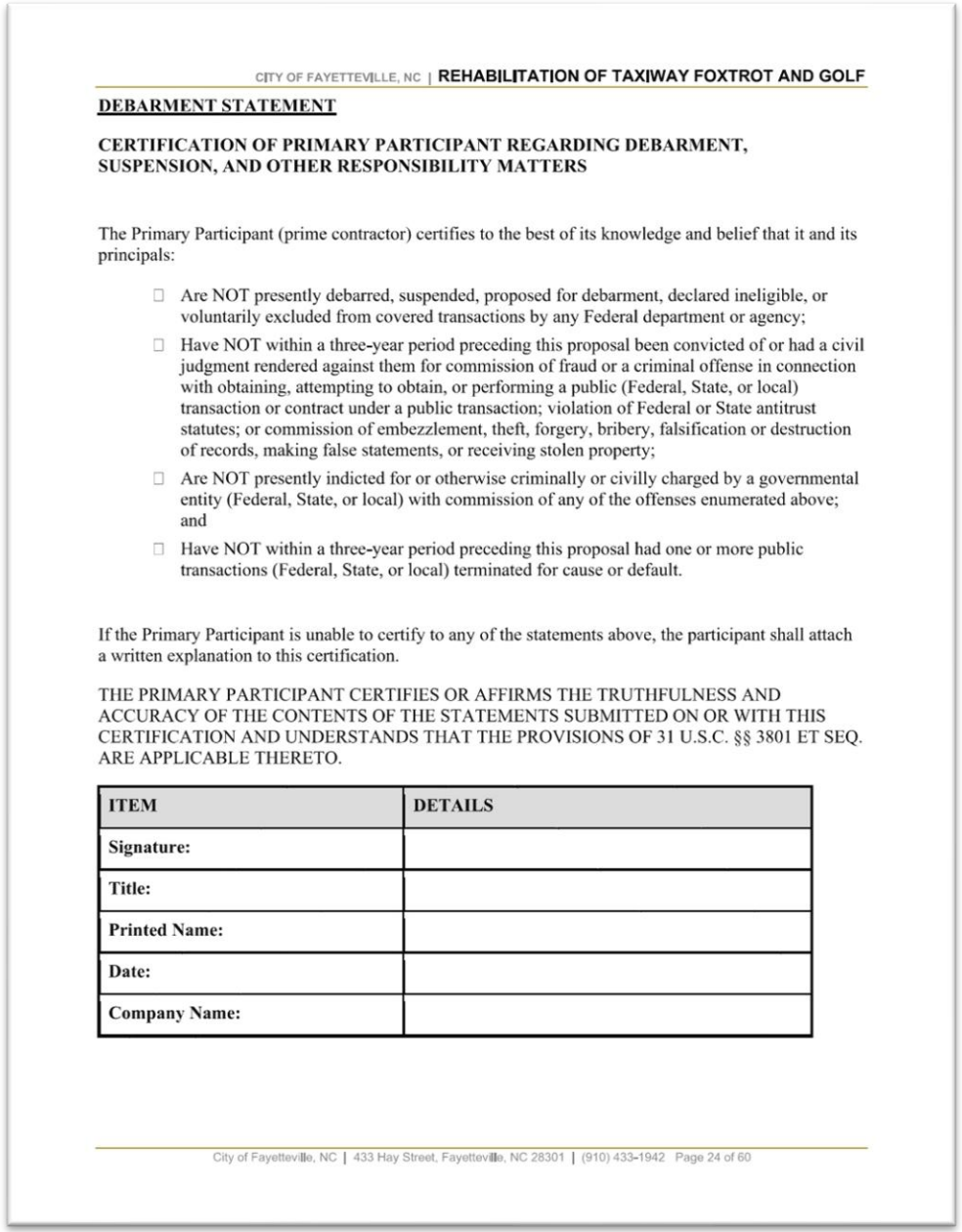
| Trade / Category | Company Name | License Number |
|---|---|---|
| Plumbing Contractor | | |
| HVAC Contractor | | |
| Electrical Contractor | | |
| Other (specify): | | |
| Other (specify): | | |
| Other (specify): | | |

**THIS FORM SHALL BE SUBMITTED WITH THE BID.**

| ITEM | DETAILS |
|---|---|
| **Company Name:** | |
| **Bidder Signature:** | |
| **Title:** | |
| **Date:** | |

# Debarment, Suspension & Responsibility Certification

- Confirms that the applicant is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency





**DEBARMENT STATEMENT**

**CERTIFICATION OF PRIMARY PARTICIPANT REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS**

The Primary Participant (prime contractor) certifies to the best of its knowledge and belief that it and its principals:

- ☐ Are NOT presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- ☐ Have NOT within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- ☐ Are NOT presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated above; and
- ☐ Have NOT within a three-year period preceding this proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

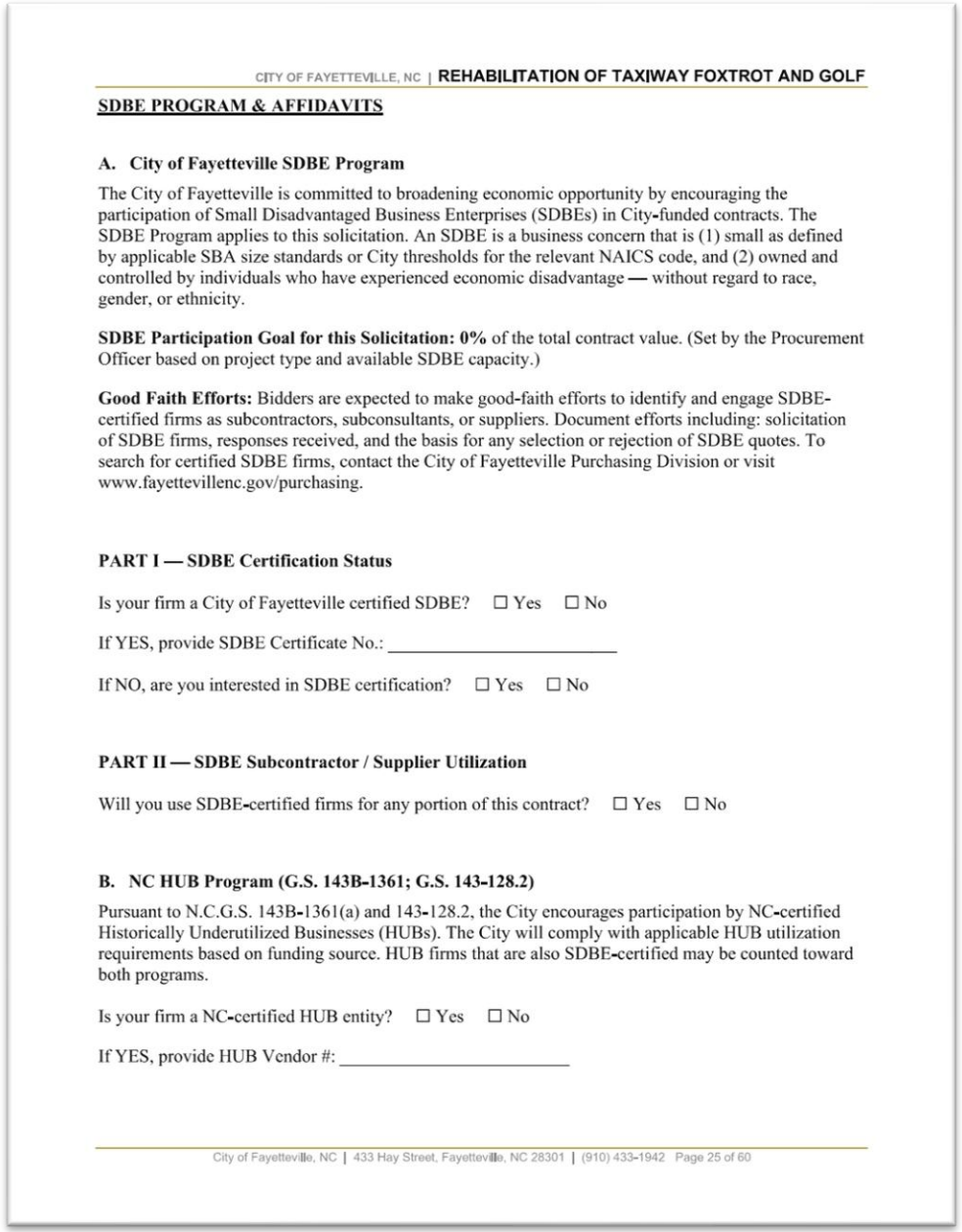
If the Primary Participant is unable to certify to any of the statements above, the participant shall attach a written explanation to this certification.

THE PRIMARY PARTICIPANT CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. §§ 3801 ET SEQ. ARE APPLICABLE THERETO.

| ITEM | DETAILS |
|---|---|
| **Signature:** | |
| **Title:** | |
| **Printed Name:** | |
| **Date:** | |
| **Company Name:** | |

# SDBE Program Forms / HUB Affidavits (A, B, and C)

- No submissions are required for HUB affidavit A, B, and C
- Bidders are expected to make good-faith efforts to identify and engage SDBE-certified firms as subcontractors, subconsultants, or suppliers
- Document efforts including: solicitation of SDBE firms, responses received, and the basis for any selection or rejection of SDBE quotes



CITY OF FAYETTEVILLE, NC | REHABILITATION OF TAXIWAY FOXTROT AND GOLF

**SDBE PROGRAM & AFFIDAVITS**

**A. City of Fayetteville SDBE Program**

The City of Fayetteville is committed to broadening economic opportunity by encouraging the participation of Small Disadvantaged Business Enterprises (SDBEs) in City-funded contracts. The SDBE Program applies to this solicitation. An SDBE is a business concern that is (1) small as defined by applicable SBA size standards or City thresholds for the relevant NAICS code, and (2) owned and controlled by individuals who have experienced economic disadvantage — without regard to race, gender, or ethnicity.

**SDBE Participation Goal for this Solicitation: 0%** of the total contract value. (Set by the Procurement Officer based on project type and available SDBE capacity.)

**Good Faith Efforts:** Bidders are expected to make good-faith efforts to identify and engage SDBE-certified firms as subcontractors, subconsultants, or suppliers. Document efforts including: solicitation of SDBE firms, responses received, and the basis for any selection or rejection of SDBE quotes. To search for certified SDBE firms, contact the City of Fayetteville Purchasing Division or visit www.fayettevillenc.gov/purchasing.

**PART I — SDBE Certification Status**

Is your firm a City of Fayetteville certified SDBE? ☐ Yes ☐ No

If YES, provide SDBE Certificate No.: _____

If NO, are you interested in SDBE certification? ☐ Yes ☐ No

**PART II — SDBE Subcontractor / Supplier Utilization**

Will you use SDBE-certified firms for any portion of this contract? ☐ Yes ☐ No

**B. NC HUB Program (G.S. 143B-1361; G.S. 143-128.2)**

Pursuant to N.C.G.S. 143B-1361(a) and 143-128.2, the City encourages participation by NC-certified Historically Underutilized Businesses (HUBs). The City will comply with applicable HUB utilization requirements based on funding source. HUB firms that are also SDBE-certified may be counted toward both programs.

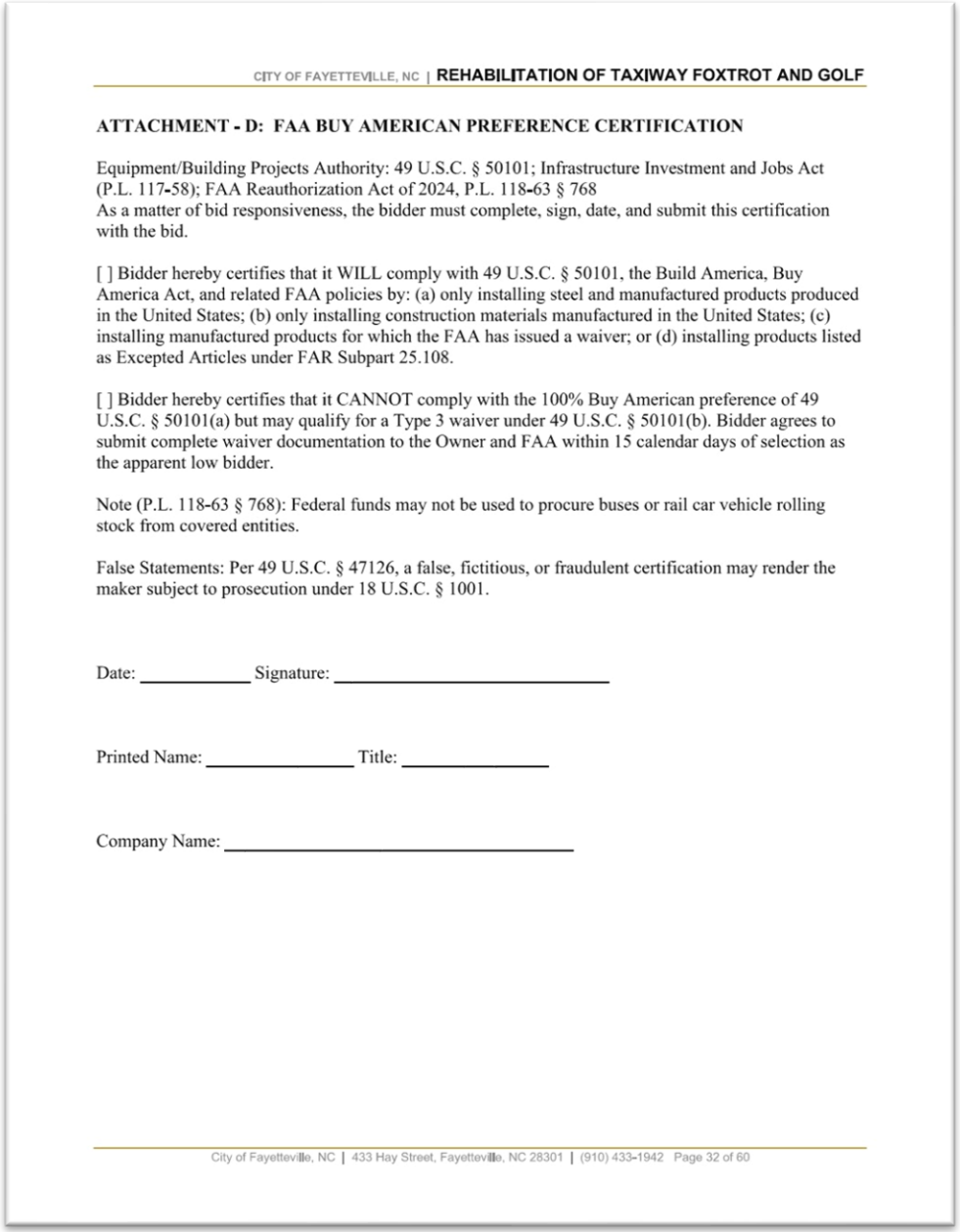
Is your firm a NC-certified HUB entity? ☐ Yes ☐ No

If YES, provide HUB Vendor #: _____

City of Fayetteville, NC | 433 Hay Street, Fayetteville, NC 28301 | (910) 433-1942 Page 25 of 60

# Attachment D: FAA Buy American Preference

- Required for AIP Projects
- Bidder must complete, sign, date, and submit this certification with the bid





**ATTACHMENT - D: FAA BUY AMERICAN PREFERENCE CERTIFICATION**

Equipment/Building Projects Authority: 49 U.S.C. § 50101; Infrastructure Investment and Jobs Act (P.L. 117-58); FAA Reauthorization Act of 2024, P.L. 118-63 § 768
As a matter of bid responsiveness, the bidder must complete, sign, date, and submit this certification with the bid.

[ ] Bidder hereby certifies that it WILL comply with 49 U.S.C. § 50101, the Build America, Buy America Act, and related FAA policies by: (a) only installing steel and manufactured products produced in the United States; (b) only installing construction materials manufactured in the United States; (c) installing manufactured products for which the FAA has issued a waiver; or (d) installing products listed as Excepted Articles under FAR Subpart 25.108.

[ ] Bidder hereby certifies that it CANNOT comply with the 100% Buy American preference of 49 U.S.C. § 50101(a) but may qualify for a Type 3 waiver under 49 U.S.C. § 50101(b). Bidder agrees to submit complete waiver documentation to the Owner and FAA within 15 calendar days of selection as the apparent low bidder.

Note (P.L. 118-63 § 768): Federal funds may not be used to procure buses or rail car vehicle rolling stock from covered entities.

False Statements: Per 49 U.S.C. § 47126, a false, fictitious, or fraudulent certification may render the maker subject to prosecution under 18 U.S.C. § 1001.

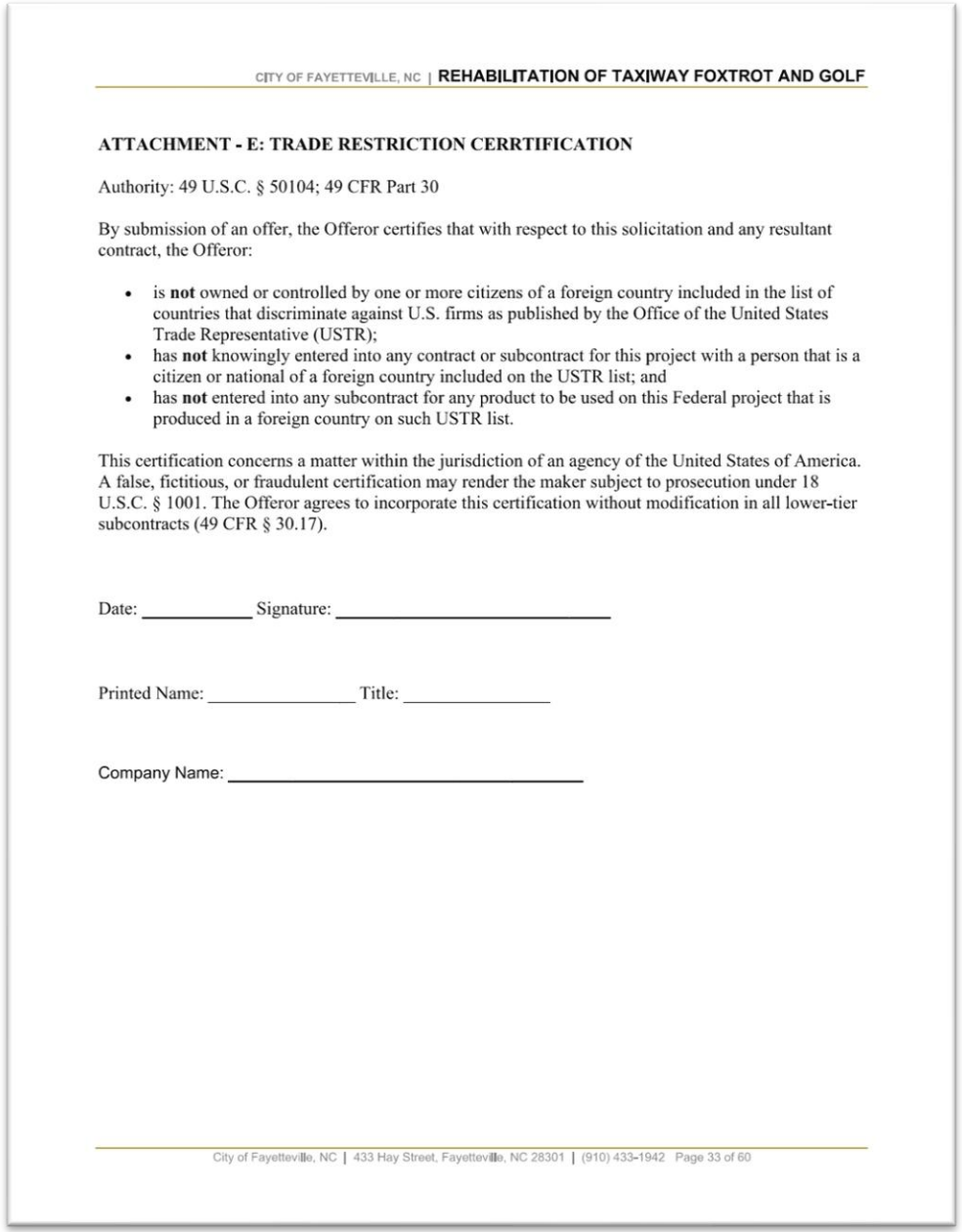
Date: _____ Signature: _____

Printed Name: _____ Title: _____

Company Name: _____

# Attachment E: Trade Restriction Certification

- Ensures compliance with United States trade restrictions





**ATTACHMENT - E: TRADE RESTRICTION CERRTIFICATION**

Authority: 49 U.S.C. § 50104; 49 CFR Part 30

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

- 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);
- 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 USTR list; and
- has **not** entered into any subcontract for any product to be used on this Federal project that is produced in a foreign country on such USTR list.

This certification concerns a matter within the jurisdiction of an agency of the United States of America. A false, fictitious, or fraudulent certification may render the maker subject to prosecution under 18 U.S.C. § 1001. The Offeror agrees to incorporate this certification without modification in all lower-tier subcontracts (49 CFR § 30.17).

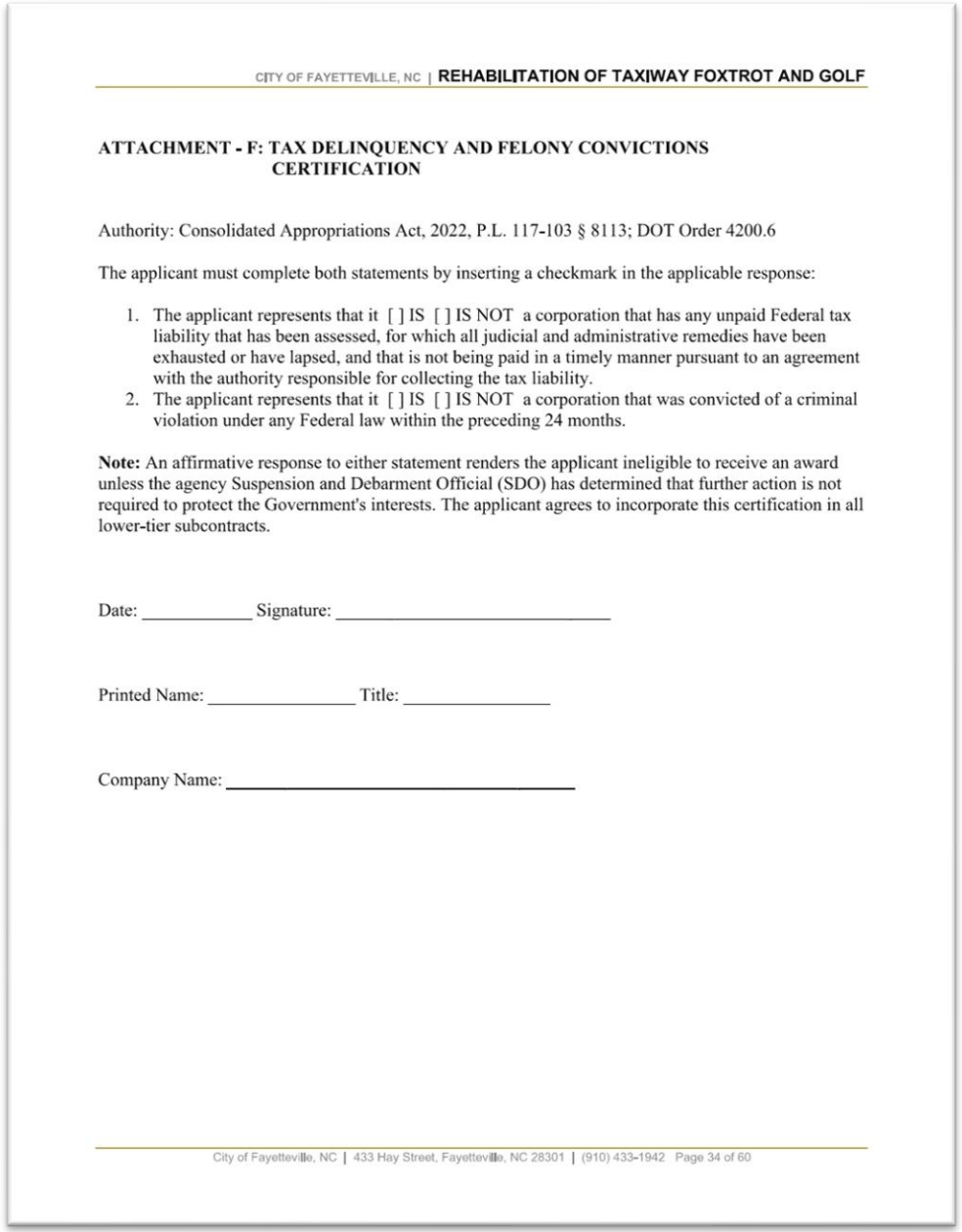
Date: _____ Signature: _____

Printed Name: _____ Title: _____

Company Name: _____

# Attachment F: Tax Delinquency and Felony Convictions Certification

- Indicates that applicant represents a corporation that does not have unpaid federal tax liability
- Indicates that applicant represents a corporation that was not convicted of a criminal violation under any Federal law within the preceding 24 months





**ATTACHMENT - F: TAX DELINQUENCY AND FELONY CONVICTIONS CERTIFICATION**

Authority: Consolidated Appropriations Act, 2022, P.L. 117-103 § 8113; DOT Order 4200.6

The applicant must complete both statements by inserting a checkmark in the applicable response:

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

**Note:** An affirmative response to either statement renders the applicant ineligible to receive an award unless the agency Suspension and Debarment Official (SDO) has determined that further action is not required to protect the Government's interests. The applicant agrees to incorporate this certification in all lower-tier subcontracts.

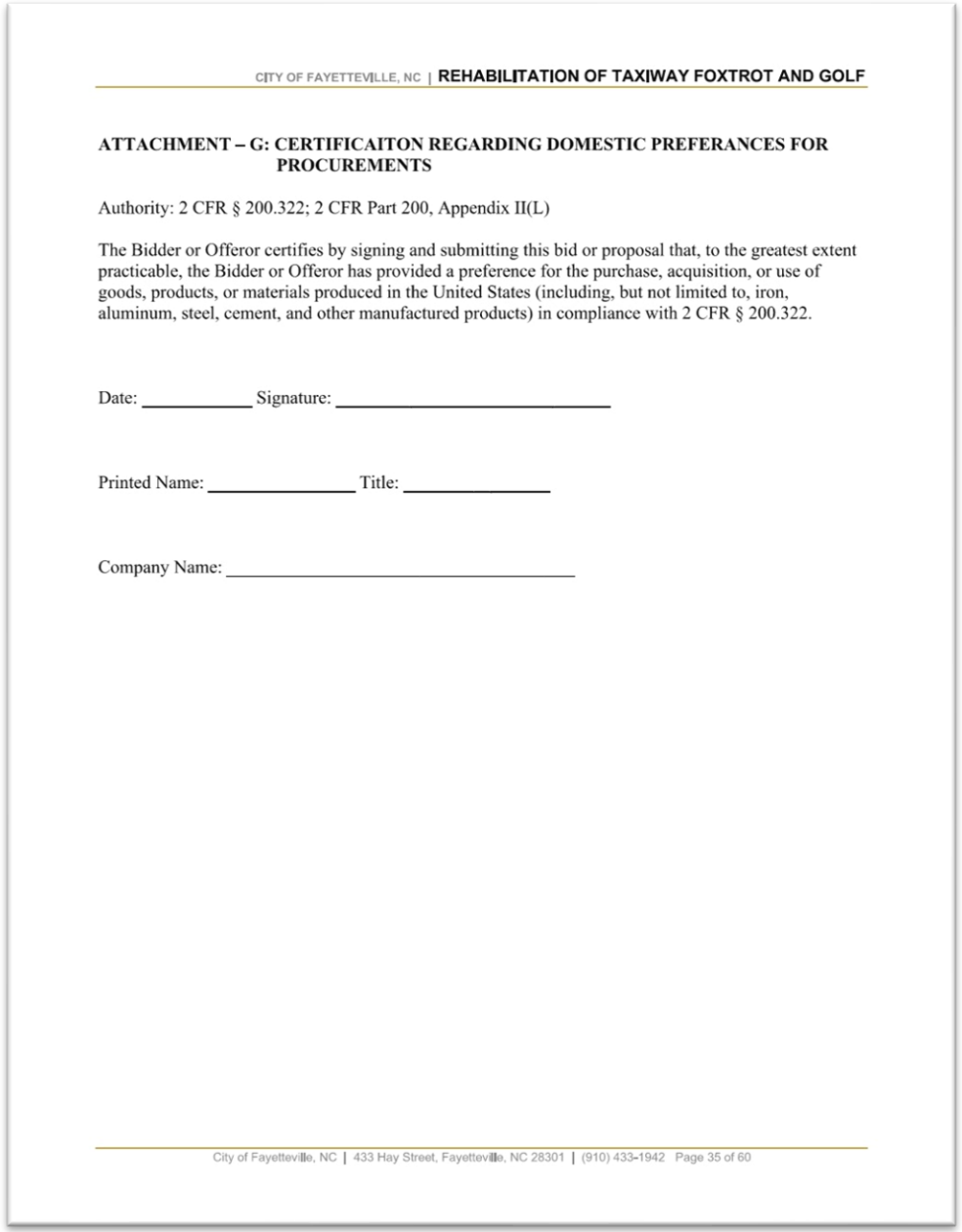
Date: _____ Signature: _____

Printed Name: _____ Title: _____

Company Name: _____

# Attachment G: Certification Regarding Domestic Preferences for Procurements

- Confirms the bidder or offeror has provided a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States in compliance with 2 CFR § 200.322





**ATTACHMENT – G: CERTIFICAITON REGARDING DOMESTIC PREFERANCES FOR PROCUREMENTS**

Authority: 2 CFR § 200.322; 2 CFR Part 200, Appendix II(L)

The Bidder or Offeror certifies by signing and submitting this bid or proposal that, to the greatest extent practicable, the Bidder or Offeror has provided a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including, but not limited to, iron, aluminum, steel, cement, and other manufactured products) in compliance with 2 CFR § 200.322.

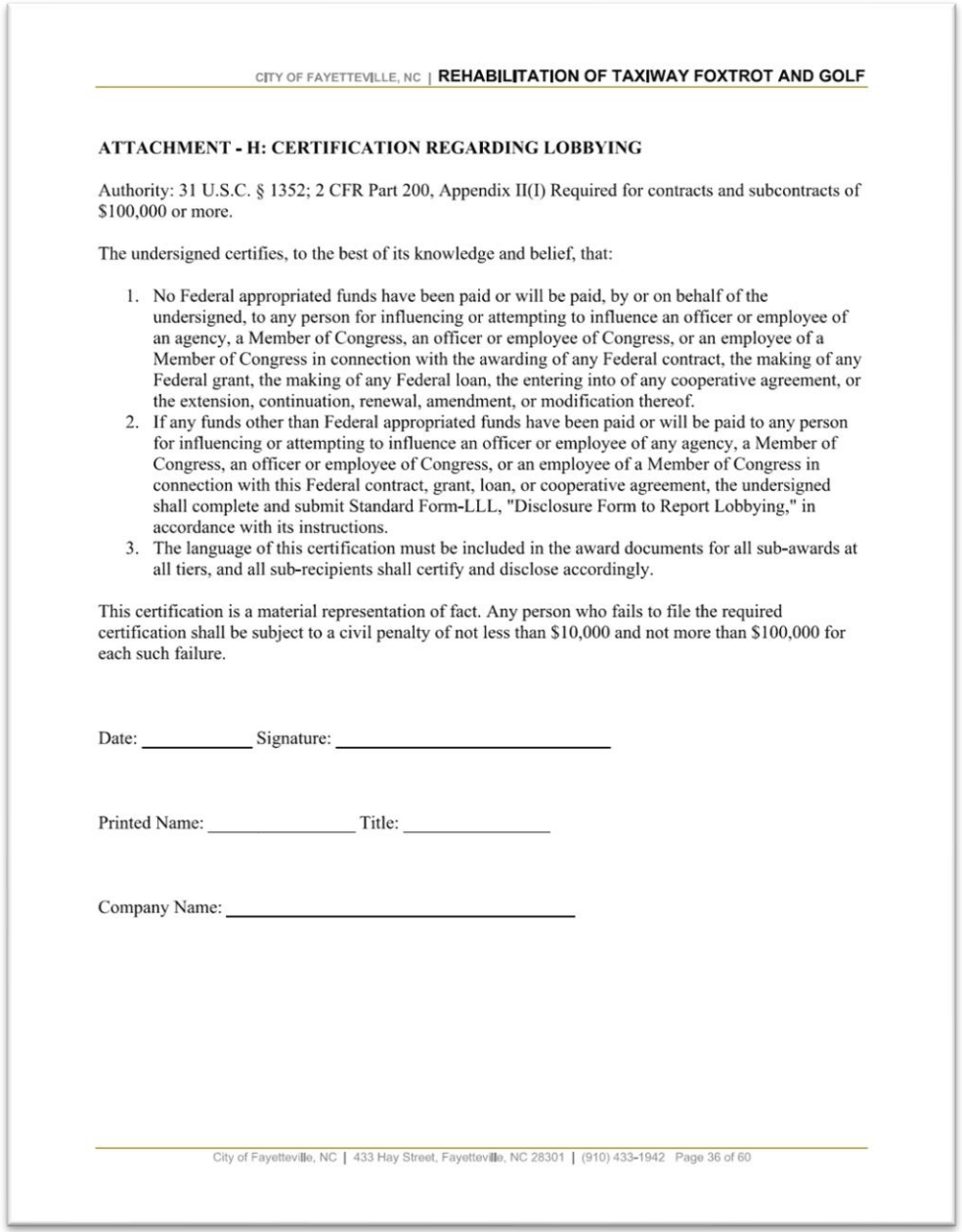
Date: _____ Signature: _____

Printed Name: _____ Title: _____

Company Name: _____

# Attachment H: Certification Regarding Lobbying

- Certifies that no federal funds have been or will be used to influence government officials or members of congress regarding the awarding or modification of federal contracts, grants, loans, or agreements





**ATTACHMENT - H: CERTIFICATION REGARDING LOBBYING**

Authority: 31 U.S.C. § 1352; 2 CFR Part 200, Appendix II(I) Required for contracts and subcontracts of $100,000 or more.

The undersigned certifies, to the best of its knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, 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, or the extension, continuation, renewal, amendment, or modification thereof.
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 language of this certification must be included in the award documents for all sub-awards at all tiers, and all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact. 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.

Date: _____ Signature: _____

Printed Name: _____ Title: _____

Company Name: _____

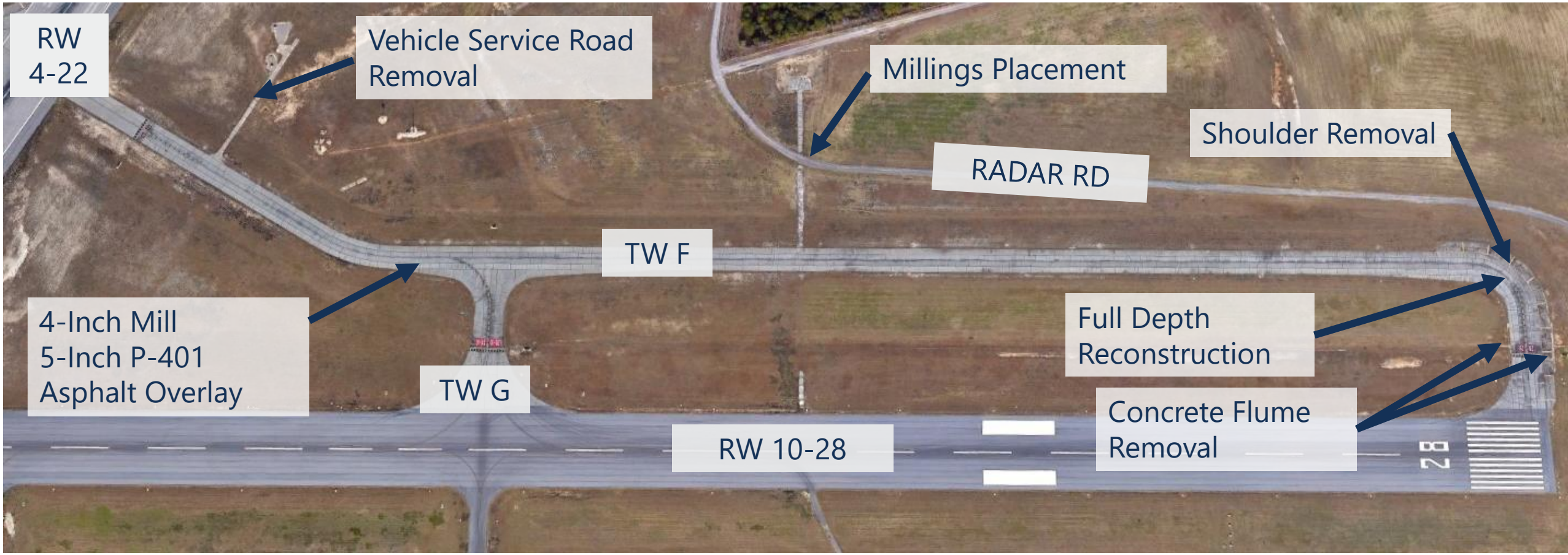
# Signed City of Fayetteville General Contracting Terms

**The contract documents consist of:**

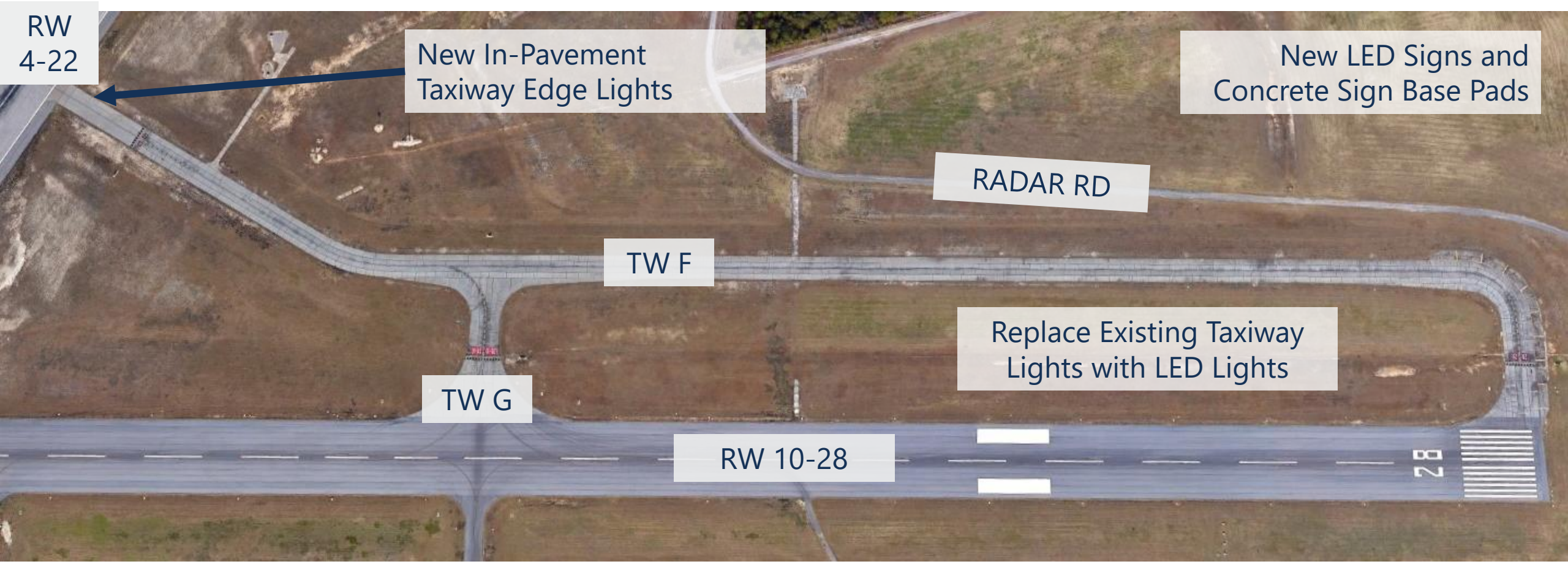
- Notice to Bidders, Instructions to Bidders, Contract Requirements, Requirements of the Work, Special Conditions if applicable;
- Drawings and Specifications, including all bulletins, addenda, or other modifications incorporated into the documents prior to their execution;
- Proposal
- Contract
- Performance Bond
- Payment Bond
- Insurance Certificates
- The approval of the City Attorney

# Project Overview and Scope

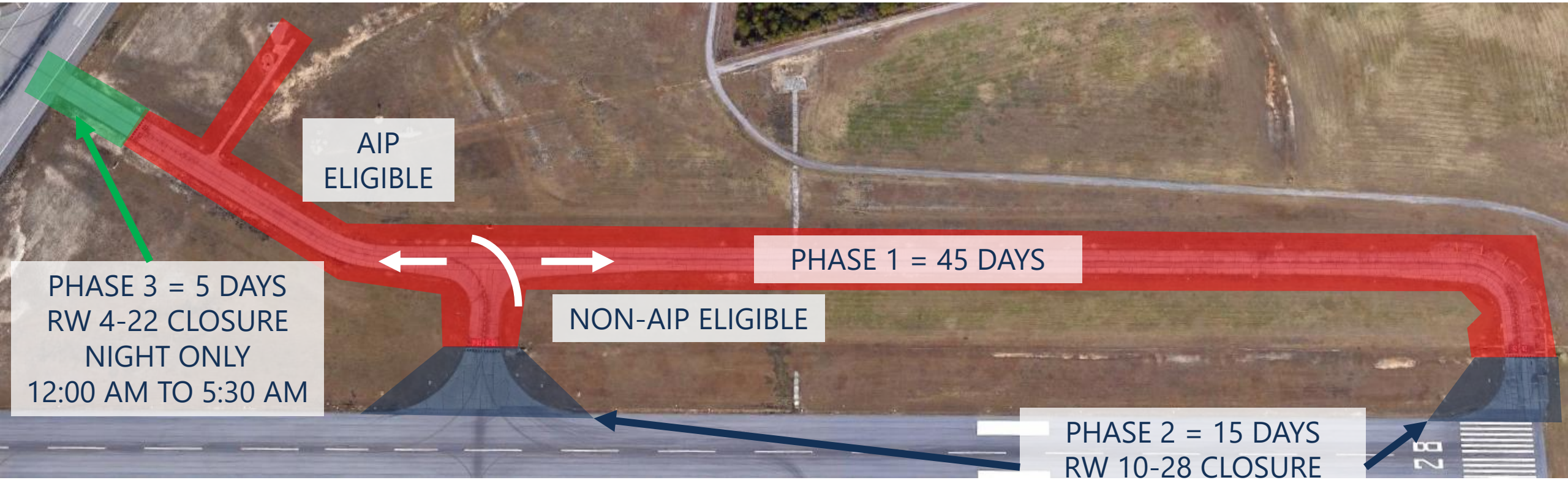
# Project Scope



# Project Scope

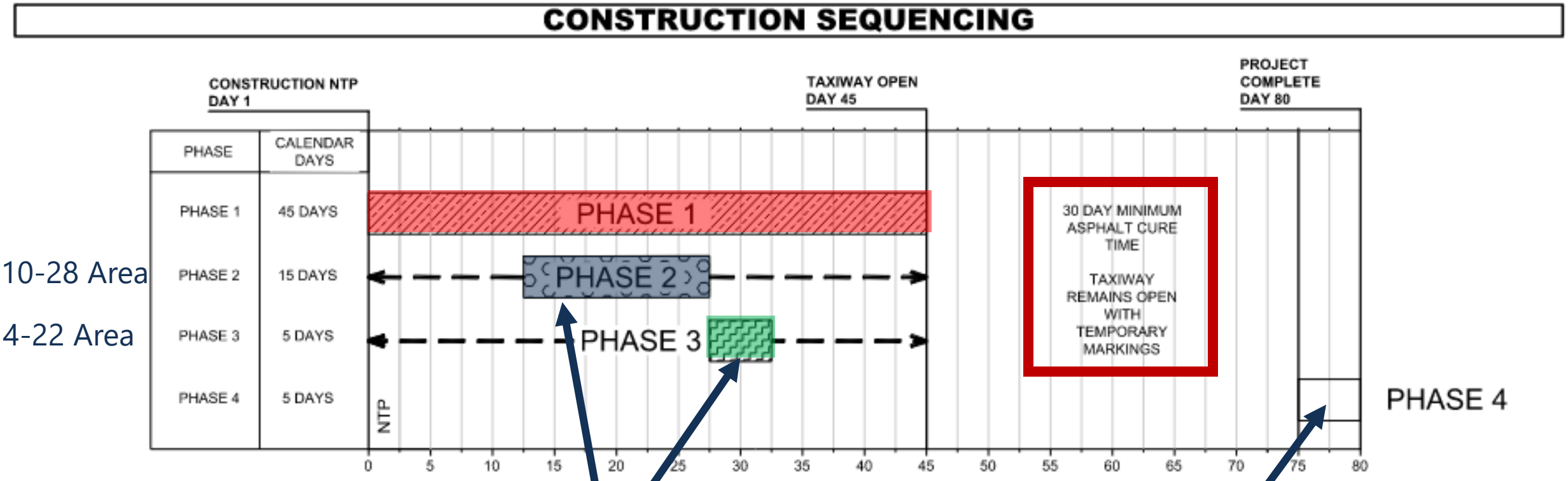


# Phasing


AIP
ELIGIBLE
PHASE 1 = 45 DAYS
NON-AIP ELIGIBLE
PHASE 3 = 5 DAYS
RW 4-22 CLOSURE
NIGHT ONLY
12:00 AM TO 5:30 AM
PHASE 2 = 15 DAYS
RW 10-28 CLOSURE
NO TIME RESTRICTIONS
28

# Phasing

30 Days Admin NTP
+ 80 Days Construction
110 Days Contract Time

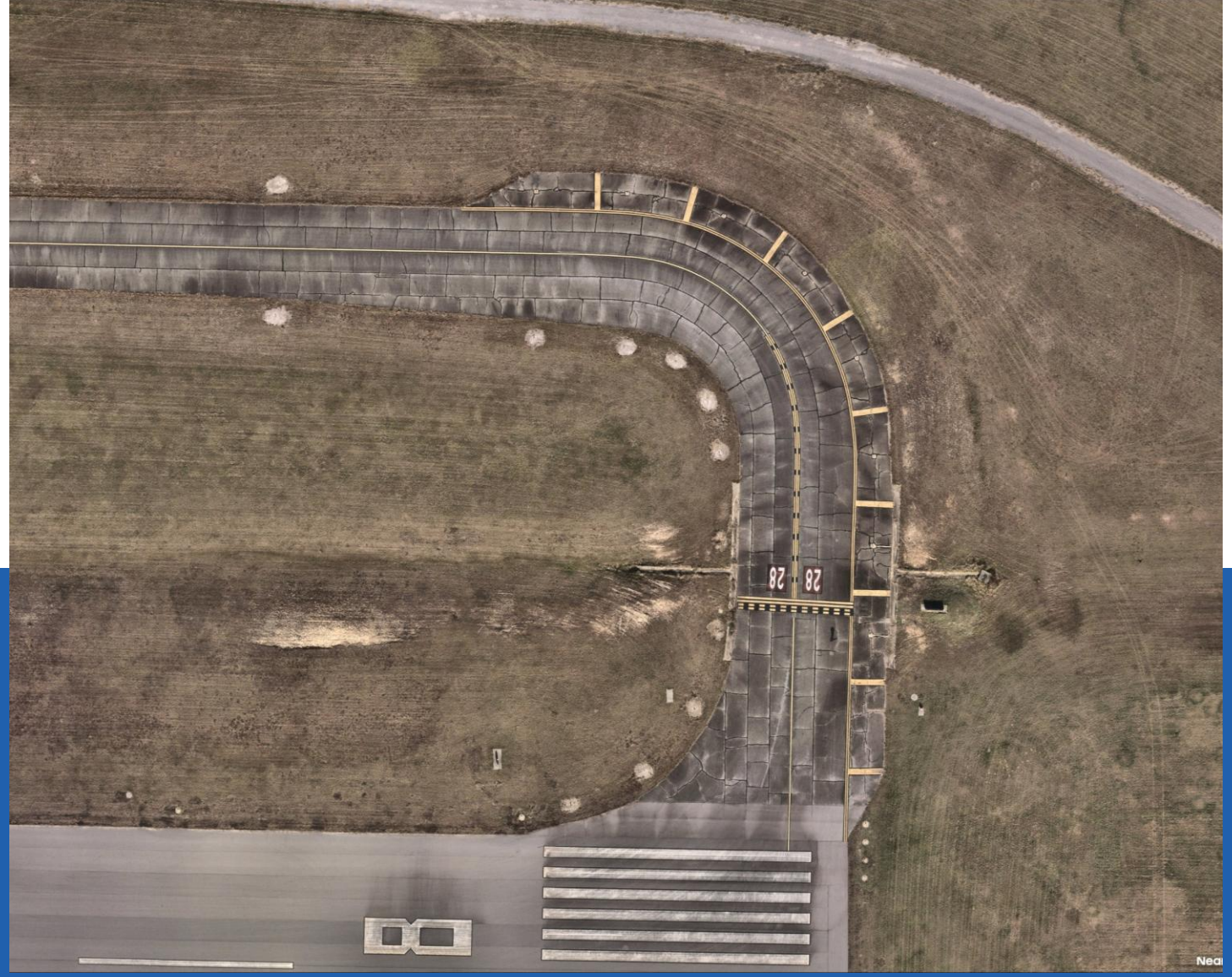



10-28 Area

4-22 Area

Phases 2 and 3
Not Concurrently
**1 Runway Must be Active**

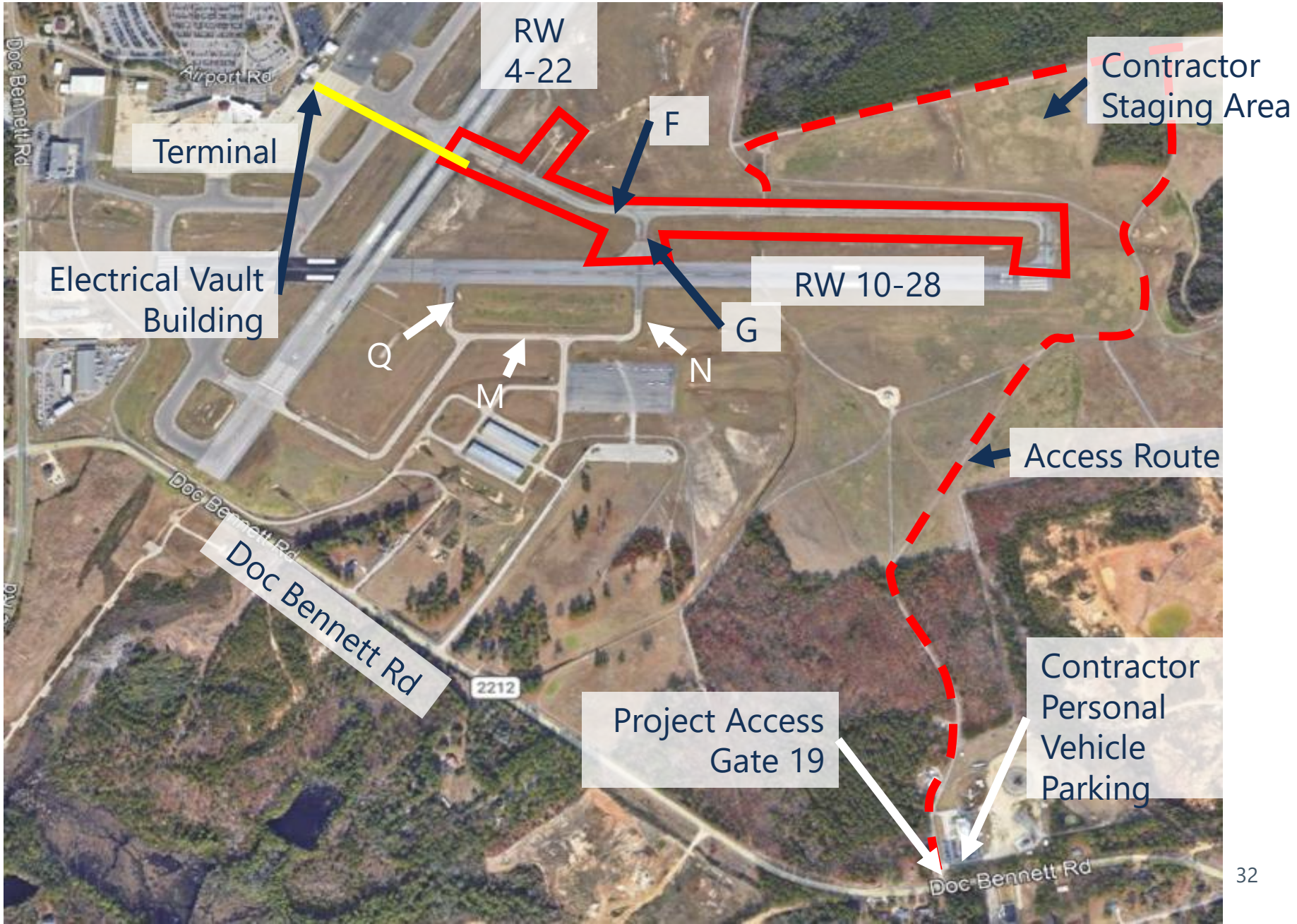
5 Days for Permanent Markings




# Questions?

Questions will be recorded and responses provided in writing to all meeting participants

# Site Visit


RW
4-22
Contractor
Staging Area
F
Terminal
Electrical Vault
Building
RW 10-28
G
Q
M
N
Access Route
Doc Bennett Rd
2212
Project Access
Gate 19
Contractor
Personal
Vehicle
Parking
Doc Bennett Rd
Airport Rd
Doc Bennett Rd

FAYETTEVILLE NC
AMERICA'S CAN DO CITY

**PURCHASING**

**June 26, 2026**

**MEMO TO:** Prospective Bidders

**FROM:** Kimberly Toon, Purchasing Manager

**SUBJECT:** **Addendum #2:** Rehabilitation of Taxiway Foxtrot and Golf Project

**DUE DATE AND TIME:** **JULY 09, 2026; 2:00 p.m.**

1. The Bid Documents are hereby modified by this Addendum #2 dated June 26, 2026. To include the following changes:

**SPECIFICATIONS:**

a. **L-108 Underground Power Cable for Airports**
   i. **Revised to include item *L-108-3 3/4" x 10' Copper Clad Ground Rod - Supplemental*.**
b. **L-125 - Installation of Airport Lighting Systems**
   i. **Revised Section 125-5.1 to clarify that item L-125-7 is the contractor's cost associated with coordinating the recalibration of the existing Constant Current Regulator.**
   ii. **Revised to include item *L-125-8 CCR Re-calibration Coordination with ADB-Safegate – Manufacturer*.**
c. **Invitation to Bid**
   i. **Revised list of pay items.**

**PLANS:**

d. **Sheet C001 – Index of Sheets and Summary of Quantities**
   i. **Added pay item *L-108-3 3/4" x 10' Copper Clad Ground Rod – Supplemental.***
   ii. **Revised pay item *L-125-7 CCR Re-Calibration Coordination with ADB-Safegate – Contractor.***
   iii. **Added pay item *L-125-8 CCR Re-calibration Coordination with ADB-Safegate – Manufacturer.***

2. The foregoing changes shall be incorporated in the Bid Documents, and a copy of the Addendum #2, signed by the Bidder, must accompany the Bid to indicate the Bidder's familiarity with the changes.

**BIDDER'S QUESTIONS:**

1. *Sign 5 is illustrated as a 4-module sign but the sign legend on side A will fit 3 modules. Since there is no bid item for a 4-module sign making it 3-modules allows the sign to be priced under bid item L-125-6.*
    a. **Engineer takes no exceptions for Sign 5 to be a 3 module sign rather than a 4 module sign, provided the manufacturer can fit the sign legend on 3 modules.**

2. *Will you please confirm that the airport wants mode 3 signs?*
    a. **Provide mode 3 signs per plans.**

3. *What are the badging requirements? Is there training required to obtain a badge? And will there be necessary SIDA access for the project?*
    a. **There is an airport provided training course to obtain a badge. The badge will grant SIDA access but will not grant movement access. Access to the electrical vault must be coordinated with the airport.**

4. *After night closure within the Runway 4-22 RSA, will a post-shift FOD inspection have to be conducted?*
    a. **Yes. Airport Operations Personnel will inspect the construction site prior to the reopening of any closed active taxiway, runway, and apron.**

5. *Will a trailer be necessary for the RPR?*
    a. **No trailer will be necessary for the RPR.**

6. *Is P-501 included in the project?*
    a. **P-501 is not included in the project.**

7. *Are all millings to be placed on Radar Road?*
    a. **All millings are to be placed at designated locations on Radar Road based on the Millings Placement Plan (Sheet C111 in the Bidding Documents).**

8. *In regard to this project, L-125-7 CCR RE-CALIBRATION COORDINATION WITH ADB-SAFEGATE indicates "include all work associated with coordinating and supporting the CCR manufacturer to complete all re-calibration of the CCR, including, but not limited to, fees, site visit expenses, manufacturer escort access to AOA, hardware modifications if directed by the manufacturer, and all other incidentals required in the field necessary to complete this item." As this is proprietary/sole source to one manufacturer, it will need to be procured outside of this Federally Funded project per AIP Guidelines, Handbook 5100-38D Change 1, 3-36 Limited Noncompetitive Proposal Situations (Sole Source…).*
    a. **Item L-125-7 revised per this addendum. See attached specification.**

9. *Sheet E306 Note 3 calls out a supplemental ground rod line item. Can this line item be provided?*
    a. **Engineer will provide a line item and estimate for Supplemental Ground Rods per this addendum.**

10. *Would it be possible to conduct the 2W2" directional drill under Runway 4-22 during a daytime runway closure? This would significantly help reduce the cost of directional drilling.*
    a. **No daytime runway closures of Runway 4-22 are permitted. All work on Runway 4-22 must be completed during night time hours from 12:00 AM to 5:30 AM.**

11. *Can more information be provided regarding the current condition of the CCR's slated to be recalibrated by ADB Safegate? Can the recalibration of the CCR's be performed by the contractor through coordination with ADB Safegate, or must ADB Safegate be on-site to perform the recalibration of the CCR's?*
    a. **One CCR is to be re-calibrated. The CCR is a ferroresonant type CCR and is part of a Switchgear Regulator System and is in working condition. ADB Safegate must be on-site to perform the recalibration of the CCR. See attached specification for more information.**

Attachments: List of Pay Items, L-108, L-125, C001

**Bidder Acknowledgement:**

Bidder Name (Print):_____

Bidder Signature:_____

Date of Signature:_____

| Item No. | Item Description | Estimated Quantity | | Unit Price in Numbers | Total Amount per Item |
|---|---|---|---|---|---|
| C-100-1 | CONTRACTOR QUALITY CONTROL PROGRAM (CQCP) | 1 | LS | $_____ | $_____ |
| C-105-1 | MOBILIZATION | 1 | LS | $_____ | $_____ |
| GP-102-1 | SAFETY AND SECURITY | 1 | LS | $_____ | $_____ |
| GP-103-1 | TEMPORARY CONSTRUCTION ITEMS | 1 | LS | $_____ | $_____ |
| P-101-1 | ASPHALT SHOULDER FULL DEPTH PAVEMENT REMOVAL (1.5-INCH DEPTH) | 1,100 | SY | $_____ | $_____ |
| P-101-2 | VEHICLE SERVICE ROAD FULL DEPTH PAVEMENT REMOVAL (UP TO 9-INCH DEPTH) | 430 | SY | $_____ | $_____ |
| P-101-3 | ASPHALT TAXIWAY FULL DEPTH PAVEMENT REMOVAL (UP TO 9-INCH DEPTH) | 625 | SY | $_____ | $_____ |
| P-101-4 | COLD MILLING | 24,770 | SY | $_____ | $_____ |
| P-101-5 | MILLINGS PLACEMENT FOR RADAR ROAD (COMPACTED IN PLACE) | 14,040 | SY | $_____ | $_____ |
| P-101-6 | CONCRETE FLUME REMOVAL | 140 | SY | $_____ | $_____ |
| C-102-1 | TEMPORARY SEEDING AND MULCHING | 2,915 | SY | $_____ | $_____ |

| Item No. | Item Description | Estimated Quantity | | Unit Price in Numbers | Total Amount per Item |
|---|---|---|---|---|---|
| C-102-2 | INSTALLATION AND REMOVAL OF COMPOST SOCK | 700 | LF | $_____ | $_____ |
| C-102-3 | INSTALLATION AND REMOVAL OF ROCK PIPE INLET PROTECTION | 1 | EA | $_____ | $_____ |
| C-102-4 | INSTALLATION AND REMOVAL OF DROP INLET PROTECTION | 2 | EA | $_____ | $_____ |
| D-701-1 | 18-INCH CORRUGATED METAL PIPE | 35 | LF | $_____ | $_____ |
| P-152-1 | UNCLASSIFIED EXCAVATION | 125 | CY | $_____ | $_____ |
| P-152-2 | UNSUITABLE EXCAVATION | 25 | CY | $_____ | $_____ |
| P-152-3 | SUBGRADE PREPARATION | 890 | SY | $_____ | $_____ |
| P-209-1 | CRUSHED AGGREGATE BASE COURSE (5-INCH DEPTH) | 890 | SY | $_____ | $_____ |
| P-401-1 | ASPHALT SURFACE COURSE (GRADATION 2) | 8,470 | TN | $_____ | $_____ |
| P-401-2 | ASPHALT LEVELING COURSE (GRADATION 3) | 25 | TN | $_____ | $_____ |
| P-602-1 | EMULSIFIED ASPHALT PRIME COAT | 12,840 | GA | $_____ | $_____ |

| Item No. | Item Description | Estimated Quantity | | Unit Price in Numbers | Total Amount per Item |
|---|---|---|---|---|---|
| P-603-1 | EMULSIFIED ASPHALT TACK COAT | 2,140 | GA | $_____ | $_____ |
| P-620-1 | SURFACE PREPARATION | 3,694 | SF | $_____ | $_____ |
| P-620-2 | WHITE REFLECTIVE MARKING (TYPE I WATERBORNE PAINT) | 300 | SF | $_____ | $_____ |
| P-620-3 | WHITE REFLECTIVE MARKING (TYPE III WATERBORNE PAINT) | 3,820 | SF | $_____ | $_____ |
| P-620-4 | YELLOW REFLECTIVE MARKING (TYPE I WATERBORNE PAINT) | 3,230 | SF | $_____ | $_____ |
| P-620-5 | RED REFLECTIVE MARKING (TYPE I WATERBORNE PAINT) | 1,140 | SF | $_____ | $_____ |
| P-620-6 | BLACK NON-REFLECTIVE MARKING (TYPE I WATERBORNE PAINT, NO GLASS BEADS) | 14,120 | SF | $_____ | $_____ |
| P-620-7 | TYPE I GLASS BEADS, GRADATION A, REFLECTIVE MEDIA | 70 | LB | $_____ | $_____ |
| P-620-8 | TYPE III GLASS BEADS, REFLECTIVE MEDIA | 620 | LB | $_____ | $_____ |
| T-901-1 | SEEDING | 0.4 | AC | $_____ | $_____ |
| T-905-1 | TOPSOIL OBTAINED ON SITE | 139 | CY | $_____ | $_____ |

| Item No. | Item Description | Estimated Quantity | | Unit Price in Numbers | Total Amount per Item |
|---|---|---|---|---|---|
| T-904-1 | SODDING | 795 | SY | $_____ | $_____ |
| T-908-1 | MULCHING | 1,709 | SY | $_____ | $_____ |
| L-105-1 | REMOVE EXISTING STAKE MOUNTED LIGHT FIXTURE | 69 | EA | $_____ | $_____ |
| L-105-2 | REMOVE EXISTING BASE MOUNTED LIGHT FIXTURE AND BASE CAN | 12 | EA | $_____ | $_____ |
| L-105-3 | REMOVE EXISTING IN-PAVEMENT LIGHT FIXTURE AND BASE CAN IN MILL/OVERLAY PAVEMENT | 2 | EA | $_____ | $_____ |
| L-105-4 | REMOVE EXISTING SIGN AND FOUNDATION | 8 | EA | $_____ | $_____ |
| L-105-5 | MISCELLANEOUS ELECTRICAL DEMOLITION | 1 | LS | $_____ | $_____ |
| L-108-1 | NO. 6 AWG, SOLID, BARE COUNTERPOISE WIRE, INSTALLED IN TRENCH, ABOVE THE DUCT BANK OR CONDUIT, INCLUDING GROUND RODS (INITIAL AND SUPPLEMENTAL) AND GROUND CONNECTORS | 10,255 | LF | $_____ | $_____ |
| L-108-2 | NO. 8 AWG, 5 KV, L-824, TYPE C CABLE | 14,600 | LF | $_____ | $_____ |
| L-108-3 | 3/4" x 10' COPPER CLAD GROUND ROD - SUPPLEMENTAL | 140 | EA | $_____ | $_____ |

| Item No. | Item Description | Estimated Quantity | | Unit Price in Numbers | Total Amount per Item |
|---|---|---|---|---|---|
| L-110-1 | 1 WAY 2-INCH SCHEDULE 40 PVC CONDUIT – DIRECT EARTH BURIED IN TURF | 9,400 | LF | $_____ | $_____ |
| L-110-2 | 1 WAY 2-INCH SCHEDULE 40 PVC CONDUIT – DIRECT EARTH BURIED UNDER MILL/OVERLAY PAVEMENT | 30 | LF | $_____ | $_____ |
| L-110-3 | 1 WAY 2-INCH SCHEDULE 40 PVC CONDUIT – CONCRETE ENCASED UNDER MILL/OVERLAY PAVEMENT | 175 | LF | $_____ | $_____ |
| L-110-4 | 2 WAY 2-INCH SCHEDULE 40 PVC CONDUIT - DIRECT EARTH BURIED | 650 | LF | $_____ | $_____ |
| L-110-5 | 2 WAY 2-INCH SCHEDULE 80 HDPE DIRECTIONAL DRILL | 400 | LF | $_____ | $_____ |
| L-115-1 | JUNCTION CAN PLAZA - 2 L-867D BASE CANS | 6 | EA | $_____ | $_____ |
| L-125-1 | L-861T(L) LED TAXIWAY EDGE LIGHT – BASE MOUNTED IN TURF | 89 | EA | $_____ | $_____ |
| L-125-2 | L-861T(L) LED TAXIWAY EDGE LIGHT – BASE MOUNTED IN MILL/OVERLAY PAVEMENT | 2 | EA | $_____ | $_____ |
| L-125-3 | REINSTALL EXISTING IN-PAVEMENT LIGHT FIXTURE ON NEW BASE CAN IN MILL/OVERLAY PAVEMENT | 2 | EA | $_____ | $_____ |
| L-125-4 | L-858(L) LED SIGN, 1-MODULE ON A NEW CONCRETE SIGN BASE | 3 | EA | $_____ | $_____ |

| Item No. | Item Description | Estimated Quantity | | Unit Price in Numbers | Total Amount per Item |
|---|---|---|---|---|---|
| L-125-5 | L-858(L) LED SIGN, 2-MODULE ON A NEW CONCRETE SIGN BASE | 2 | EA | $_____ | $_____ |
| L-125-6 | L-858(L) LED SIGN, 3-MODULE ON A NEW CONCRETE SIGN BASE | 3 | EA | $_____ | $_____ |
| L-125-7 | CCR RE-CALIBRATION COORDINATION WITH ADB-SAFEGATE - CONTRACTOR | 1 | LS | $_____ | $_____ |
| L-125-8 | CCR RE-CALIBRATION COORDINATION WITH ADB-SAFEGATE - MANUFACTURER | 1 | AL | $_____ | $_____ |

**This Bid Package is executed by:**

| ITEM | DETAILS |
|---|---|
| **Name / Title:** | |
| **Company Name:** | |
| **Mailing Address:** | |
| **Email:** | |
| **Signature:** | |
| **Phone Number:** | |
| **NC Contractor License No.:** | |
| **License Classification / Limitation:** | |
| **Total Bid Amount (figures):** | $ |
| **Total Bid Amount (written):** | |

**ACKNOWLEDGEMENT OF ADDENDA**

The bidder has received, acknowledged, and incorporated the following addenda in completing this Bid. (Written Initials and date as appropriate.)

| ITEM | DETAILS |
|---|---|
| **Addendum No. 1:** | Dated: _____ |
| **Addendum No. 2:** | Dated: _____ |
| **Addendum No. 3:** | Dated: _____ |
| **Addendum No. 4:** | Dated: _____ |

# Item L-108 Underground Power Cable for Airports

The following items in red are changes associated with Addendum 2

## 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 XHHW, 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, XHHW, 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 XHHW 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. 6AWG 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-clad steel. The ground rods shall be of the length and diameter specified on the plans, but in no case be less than 10 feet long and 3/4 inch 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.

**108-2.7 Flowable backfill.** Not used.

**108-2.8 Cable identification tags.** Cable identification tags shall be made from a non-corrosive material with the circuit identification stamped 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 to a minimum of 100 percent of ASTM D1557.

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** and seeding 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 to a minimum of 100 percent of ASTM D1557. 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 “SPLICE” 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 contaminates 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.** [Not used]

**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.

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 **100** 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** Cable or counterpoise wire installed in duct bank or conduit shall be measured by the number of linear feet of cable or counterpoise wire installed in trenches, duct bank, or conduit, including ground rods 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. This measurement shall include an additional supplemental ground rod required if the first ground rod does not reach ground resistance requirements. 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.

## BASIS OF PAYMENT

**108-5.1** Payment will be made at the contract unit price for cable, bare counterpoise, and equipment ground installed in duct bank or conduit, and any required additional supplemental ground rods 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 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:

| | | |
|---|---|---|
| L-108-1 | No. 6 AWG, Solid, Bare Counterpoise Wire, Installed in Trench, Above the Duct Bank or Conduit, Including Ground Rods (Initial and Supplemental) and Ground Connectors | per linear foot |
| L-108-2 | No. 8 AWG, 5 kV, L-824, Type C Cable | per linear foot |
| L-108-3 | 3/4" x 10' Copper Clad Ground Rod - Supplemental | 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 150/5340-26 | 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 |

Federal Aviation Administration Standard

| | |
|---|---|
| FAA STD-019E | Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment |

## END OF ITEM L-108

# Item L-125 Installation of Airport Lighting Systems

The following items in red are changes associated with Addendum 2

## 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 performs 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 an 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.

**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 Concrete.** All concrete used in structures must conform to the requirements of Item P-610, Concrete for Miscellaneous Structures.

**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 Taxiway Edge Lights**. Taxiway edge lights shall conform to the requirements of FAA AC 150/5345-46, latest edition TYPE L-861T. Taxiway edge fixture lamps shall be LED type with properly sized transformer at the locations indicated on the plans. Taxiway edge lights shall be installed at the locations indicated in the plans in accordance with the details.

**125-2.8 Guidance Signs.** Guidance Signs shall conform to the requirements of FAA AC 150/5345-44 latest edition TYPE L-858 Y, R, L, and B. Guidance signs shall be of size and type as indicated on the details in the plans with LED type engines. The signs shall be installed at the locations indicated in the plans in accordance with the details with the messages as shown on the sign schedule.

**125-2.9 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 shall be as shown on plans. Base cans 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.

**125-2.10 Isolation Transformers**. Isolation Transformers shall be Type L-830 , size as required for each installation. Transformer shall conform to AC 150/5345-47.

**125-2.11 Constant Current Regulators**. Not used.

**125-2.17 Basis Of Design.** The airfield lighting systems are designed using the below listed maximum fixture wattages. Approved airfield lighting fixtures with higher wattages are permissible provided the Contractor assumes all costs for the redesign of the airfield lighting and necessary power distribution systems and all costs incurred furnishing and installing any additional

equipment. In no case shall the Contractor be allowed to reduce the size of the constant current regulators or the power distribution systems.

L-861T Taxiway Edge Light - LED (Elevated)
21 W
L-861T Taxiway Edge Light - Incandescent (Elevated)
42 VA

L-858Y,R,L - LED

| | | | |
|---|---|---|---|
| Location, Information, Boundary, Destination Mandatory Sign | 1 Module | 100 VA | |
| | 2 Module | 100 VA | |
| | 3 Module | 110 VA | |
| | 4 Module | 110 VA | |

## 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.

**125-3.2 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.

Require the Contractor to furnish all necessary equipment and appliances for testing the underground cables, counterpoise, and safety ground in accordance with Item L-108, Underground Power Cable for Airports and L-131.

**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.

**125-3.5 Maintenance Of Airport Lighting Systems**. The Contractor shall maintain the airport lighting systems during the various phases of the work as shown on the phasing plan(s) or as directed by the Engineer. The Contractor shall be responsible for all temporary connections in the field or at the regulator necessary for operation of the circuits during construction.

**125-3.6 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. The restoration shall include top soiling, seeding, and mulching. The Contractor shall grade around structures as required to provide positive drainage away from the structure. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacement until final acceptance. All restoration shall be considered incidental to the item for which it applies.

**125-3.7 Inspection**. Inspect each light fixture, marker, and sign to determine that it is installed correctly, at the proper height, in line with the other fixtures, level, and properly oriented.

Check all fixture, marker, and sign securing screws or bolts to ensure that they have been tightened per manufacturer's recommendations. Use an anti-seize compound on bolts made of stainless steel.

Check each fixture, marker, and sign to determine that the lenses and panels are clean and unscratched.

Check identification numbers for each light fixture and sign to determine that the number at the installation is assigned in the plans or by the Owner's direction.

Check equipment covered by FAA specifications to determine if the manufacturers have supplied certified equipment. Also check equipment for general conformance with the specification requirements.

Check base plates for damage during installation and refinish according to manufacturer's instructions.

## METHOD OF MEASUREMENT

**125-4.1** Taxiway lights and guidance signs will be measured by the number of each type installed as completed units in place, ready for operation, and accepted by the RPR. In-Pavement Light Fixtures reinstalled on existing base cans will be measured by the number installed as completed units in place, ready for operation, and accepted by the RPR.

**125-4.2** Measurement for the coordination of re-calibrating the existing Constant Current Regulator will be per lump sum. This will include all work associated with coordinating and supporting the CCR manufacturer to complete all re-calibration of the CCR, including, but not limited to, fees, site visit expenses, manufacturer escort access to AOA, hardware modifications if directed by the manufacturer, and all other incidentals required in the field necessary to complete this item in accordance with these specifications, installation details shown on the plan drawings, and as directed by the RPR.

## BASIS OF PAYMENT

**125-5.1** Payment will be made at the Contract unit price for each complete light fixture, guidance sign, 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.

Taxiway edge light units include fixtures, stems, frangible couplings, base cans, base plates, gaskets, isolation transformers, grounding connections, ground rods, excavation, backfill, restoration, testing, and incidental items required to provide a functioning unit in accordance with the Contract Documents.

Item L-125-7: Payment will be made at the contract lump sum unit price for the contractor's cost associated with coordinating the re-calibration of the existing Constant Current Regulator with the manufacturer ADB Safegate. This price will be full compensation for furnishing all necessary materials by the contractor and for any ~~all~~ preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals by the contractor necessary to complete the item, including all coordination, fees, and site visit expenses required by the CCR manufacturer.

Item L-125-8: Payment will be made under the ALCMS vendor allowance pay item. This shall include work necessary to complete a complete re-calibration of the existing CCR including, but not limited to, fees, site visit expenses, manufacturer escort access to AOA, hardware modifications if directed by the manufacturer, and all other incidentals required in the field necessary to complete this item in accordance with these specifications, installation details shown on the plan drawings, and as directed by the RPR.

Payment will be made under:

| | | |
|---|---|---|
| L-125-1 | L-861T(L) LED Taxiway Edge Light – Base Mounted in Turf | per each |
| L-125-2 | L-861T(L) LED Taxiway Edge Light – Base Mounted in Mill/Overlay Pavement | per each |
| L-125-3 | Reinstall Existing In-Pavement Light Fixture On New Base Can In Mill/Overlay Pavement | per each |
| L-125-4 | L-858(L) LED Sign, 1-Module on a New Concrete Sign Base | per each |
| L-125-5 | L-858(L) LED Sign, 2-Module on a New Concrete Sign Base | per each |
| L-125-6 | L-858(L) LED Sign, 3-Module on a New Concrete Sign Base | per each |

| | | |
|---|---|---|
| L-125-7 | CCR Re-calibration Coordination with ADB-Safegate - Contractor | per lump sum |
| L-125-8 | CCR Re-calibration Coordination with ADB-Safegate - Manufacturer | per allowance |

## 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

## CIVIL DRAWINGS

| SHEET # | SHEET TITLE |
|---|---|
| C000 | COVER SHEET |
| C001 | INDEX OF DRAWINGS AND SUMMARY OF QUANTITIES |
| C011 | SAFETY AND SECURITY NOTES AND DETAILS |
| C012 | CONTRACTOR ACCESS PLAN |
| C013 | PART 77 AIRSPACE PLAN |
| C014 | CONTRACTOR PHASING PLAN |
| C015 | TEMPORARY RUNWAY CLOSURE PLAN |
| C020 | HORIZONTAL AND VERTICAL CONTROL PLAN |
| C100 | DEMOLITION KEY MAP |
| C101 | DEMOLITION PLAN (1 OF 5) |
| C102 | DEMOLITION PLAN (2 OF 5) |
| C103 | DEMOLITION PLAN (3 OF 5) |
| C104 | DEMOLITION PLAN (4 OF 5) |
| C105 | DEMOLITION PLAN (5 OF 5) |
| C111 | MILLINGS PLACEMENT PLAN |
| C200 | PAVING KEY MAP |
| C201 | PAVING PLAN (1 OF 5) |
| C202 | PAVING PLAN (2 OF 5) |
| C203 | PAVING PLAN (3 OF 5) |
| C204 | PAVING PLAN (4 OF 5) |
| C205 | PAVING PLAN (5 OF 5) |
| C210 | TAXIWAY F & G PLAN AND PROFILE KEY MAP |
| C211 | TAXIWAY F PLAN AND PROFILE (1 OF 7) |
| C212 | TAXIWAY F PLAN AND PROFILE (2 OF 7) |
| C213 | TAXIWAY F PLAN AND PROFILE (3 OF 7) |
| C214 | TAXIWAY F PLAN AND PROFILE (4 OF 7) |
| C215 | TAXIWAY F PLAN AND PROFILE (5 OF 7) |
| C216 | TAXIWAY F PLAN AND PROFILE (6 OF 7) |
| C217 | TAXIWAY F PLAN AND PROFILE (7 OF 7) |
| C218 | TAXIWAY G PLAN AND PROFILE |
| C231 | TYPICAL SECTIONS (1 OF 2) |
| C232 | TYPICAL SECTIONS (2 OF 2) |
| C300 | GRADING KEY MAP |
| C301 | GRADING PLAN (1 OF 5) |
| C302 | GRADING PLAN (2 OF 5) |
| C303 | GRADING PLAN (3 OF 5) |
| C304 | GRADING PLAN (4 OF 5) |
| C305 | GRADING PLAN (5 OF 5) |
| C311 | INTERMEDIATE ELEVATION PLAN - TIE-INS |
| C320 | FINAL ELEVATION KEY MAP |
| C321 | FINAL ELEVATION PLAN (1 OF 5) |
| C322 | FINAL ELEVATION PLAN (2 OF 5) |
| C323 | FINAL ELEVATION PLAN (3 OF 5) |
| C324 | FINAL ELEVATION PLAN (4 OF 5) |
| C325 | FINAL ELEVATION PLAN (5 OF 5) |
| C400 | PAVEMENT MARKING KEY MAP |
| C401 | PAVEMENT MARKING PLAN (1 OF 5) |
| C402 | PAVEMENT MARKING PLAN (2 OF 5) |
| C403 | PAVEMENT MARKING PLAN (3 OF 5) |
| C404 | PAVEMENT MARKING PLAN (4 OF 5) |
| C405 | PAVEMENT MARKING PLAN (5 OF 5) |
| C431 | PAVEMENT MARKING DETAILS |
| C531 | EROSION CONTROL NOTES |
| C532 | EROSION CONTROL DETAILS (1 OF 3) |
| C533 | EROSION CONTROL DETAILS (2 OF 3) |
| C534 | EROSION CONTROL DETAILS (3 OF 3) |

## ELECTRICAL DRAWINGS

| SHEET # | SHEET TITLE |
|---|---|
| E001 | ELECTRICAL GENERAL NOTES |
| E101 | ELECTRICAL DEMOLITION PLAN |
| E102 | ELECTRICAL DEMOLITION PLAN |
| E103 | ELECTRICAL DEMOLITION PLAN |
| E104 | ELECTRICAL DEMOLITION PLAN |
| E105 | ELECTRICAL DEMOLITION PLAN |
| E106 | ELECTRICAL DEMOLITION PLAN |
| E201 | ELECTRICAL LAYOUT AND CIRCUITING PLAN |
| E202 | ELECTRICAL LAYOUT AND CIRCUITING PLAN |
| E203 | ELECTRICAL LAYOUT AND CIRCUITING PLAN |
| E204 | ELECTRICAL LAYOUT AND CIRCUITING PLAN |
| E205 | ELECTRICAL LAYOUT AND CIRCUITING PLAN |
| E206 | ELECTRICAL LAYOUT AND CIRCUITING PLAN |
| E301 | ELECTRICAL DETAILS |
| E302 | ELECTRICAL DETAILS |
| E303 | ELECTRICAL DETAILS |
| E304 | ELECTRICAL DETAILS |
| E305 | ELECTRICAL DETAILS |
| E306 | ELECTRICAL DETAILS |
| E307 | ELECTRICAL DETAILS |
| E308 | ELECTRICAL DETAILS |

## SUMMARY OF QUANTITIES

| ITEM NO. | ITEM DESCRIPTION | AIP ELIGIBLE | NON-AIP ELIGIBLE | TOTAL QUANTITY | UNIT |
|---|---|---|---|---|---|
| | **CIVIL QUANTITIES** | | | | |
| C-100-1 | CONTRACTOR QUALITY CONTROL PROGRAM (CQCP) | 0.5 | 0.5 | 1 | LS |
| C-105-1 | MOBILIZATION | 0.5 | 0.5 | 1 | LS |
| GP-102-1 | SAFETY AND SECURITY | 0.5 | 0.5 | 1 | LS |
| GP-103-1 | TEMPORARY CONSTRUCTION ITEMS | 0.5 | 0.5 | 1 | LS |
| P-101-1 | ASPHALT SHOULDER FULL DEPTH PAVEMENT REMOVAL (1.5-INCH DEPTH) | 0 | 1100 | 1100 | SY |
| P-101-2 | VEHICLE SERVICE ROAD FULL DEPTH PAVEMENT REMOVAL (UP TO 9-INCH DEPTH) | 430 | 0 | 430 | SY |
| P-101-3 | ASPHALT TAXIWAY FULL DEPTH PAVEMENT REMOVAL (UP TO 9-INCH DEPTH) | 0 | 625 | 625 | SY |
| P-101-4 | COLD MILLING | 10270 | 14500 | 24770 | SY |
| P-101-5 | MILLINGS PLACEMENT FOR RADAR ROAD (COMPACTED IN PLACE) | 14040 | 0 | 14040 | SY |
| P-101-6 | CONCRETE FLUME REMOVAL | 0 | 140 | 140 | SY |
| C-102-1 | TEMPORARY SEEDING AND MULCHING | 425 | 2490 | 2915 | SY |
| C-102-2 | INSTALLATION AND REMOVAL OF COMPOST SOCK | 0 | 700 | 700 | LF |
| C-102-3 | INSTALLATION AND REMOVAL OF ROCK PIPE INLET PROTECTION | 0 | 1 | 1 | EA |
| C-102-4 | INSTALLATION AND REMOVAL OF DROP INLET PROTECTION | 1 | 1 | 2 | EA |
| D-701-1 | 18-INCH CORRUGATED METAL PIPE | 35 | 0 | 35 | LF |
| P-152-1 | UNCLASSIFIED EXCAVATION | 0 | 125 | 125 | CY |
| P-152-2 | UNSUITABLE EXCAVATION | 0 | 25 | 25 | CY |
| P-152-3 | SUBGRADE PREPARATION | 0 | 890 | 890 | SY |
| P-209-1 | CRUSHED AGGREGATE BASE COURSE (5-INCH DEPTH) | 0 | 890 | 890 | SY |
| P-401-1 | ASPHALT SURFACE COURSE (GRADATION 2) | 3390 | 5080 | 8470 | TN |
| P-401-2 | ASPHALT LEVELING COURSE (GRADATION 3) | 20 | 5 | 25 | TN |
| P-602-1 | EMULSIFIED ASPHALT PRIME COAT | 5140 | 7700 | 12840 | GA |
| P-603-1 | EMULSIFIED ASPHALT TACK COAT | 890 | 1250 | 2140 | GA |
| P-620-1 | SURFACE PREPARATION | 3372 | 322 | 3694 | SF |
| P-620-2 | WHITE REFLECTIVE MARKING (TYPE I WATERBORNE PAINT) | 200 | 100 | 300 | SF |
| P-620-3 | WHITE REFLECTIVE MARKING (TYPE III WATERBORNE PAINT) | 1190 | 2630 | 3820 | SF |
| P-620-4 | YELLOW REFLECTIVE MARKING (TYPE I WATERBORNE PAINT) | 1650 | 1580 | 3230 | SF |
| P-620-5 | RED REFLECTIVE MARKING (TYPE I WATERBORNE PAINT) | 830 | 310 | 1140 | SF |
| P-620-6 | BLACK NON-REFLECTIVE MARKING (TYPE I WATERBORNE PAINT, NO GLASS BEADS) | 6360 | 7760 | 14120 | SF |
| P-620-7 | TYPE I GLASS BEADS, GRADATION A, REFLECTIVE MEDIA | 51 | 19 | 70 | LB |
| P-620-8 | TYPE III GLASS BEADS, REFLECTIVE MEDIA | 274 | 346 | 620 | LB |
| T-901-1 | SEEDING | 0.1 | 0.3 | 0.4 | AC |
| T-905-1 | TOPSOIL OBTAINED ON SITE | 24 | 115 | 139 | CY |
| T-904-1 | SODDING | 35 | 760 | 795 | SY |
| T-908-1 | MULCHING | 395 | 1314 | 1709 | SY |
| | **ELECTRICAL QUANTITIES** | | | | |
| L-105-1 | REMOVE EXISTING STAKE MOUNTED LIGHT FIXTURE | 35 | 34 | 69 | EA |
| L-105-2 | REMOVE EXISTING BASE MOUNTED LIGHT FIXTURE AND BASE CAN | 2 | 10 | 12 | EA |
| L-105-3 | REMOVE EXISTING IN-PAVEMENT LIGHT FIXTURE AND BASE CAN IN MILL/OVERLAY PAVEMENT | 1 | 1 | 2 | EA |
| L-105-4 | REMOVE EXISTING SIGN AND FOUNDATION | 4 | 4 | 8 | EA |
| L-105-5 | MISCELLANEOUS ELECTRICAL DEMOLITION | 0.5 | 0.5 | 1 | LS |
| L-108-1 | NO. 6 AWG, SOLID, BARE COUNTERPOISE WIRE, INSTALLED IN TRENCH, ABOVE THE DUCT BANK OR CONDUIT, INCLUDING GROUND RODS (INITIAL AND SUPPLEMENTAL) AND GROUND CONNECTORS | 4155 | 6100 | 10255 | LF |
| L-108-2 | NO. 8 AWG, 5 KV, L-824, TYPE C CABLE | 7800 | 6800 | 14600 | LF |
| L-108-3 | 3/4" x 10' COPPER CLAD GROUND ROD - SUPPLEMENTAL | 70 | 70 | 140 | EA |
| L-110-1 | 1 WAY 2-INCH SCHEDULE 40 PVC CONDUIT – DIRECT EARTH BURIED IN TURF | 3500 | 5900 | 9400 | LF |
| L-110-2 | 1 WAY 2-INCH SCHEDULE 40 PVC CONDUIT – DIRECT EARTH BURIED UNDER MILL/OVERLAY PAVEMENT | 30 | 0 | 30 | LF |
| L-110-3 | 1 WAY 2-INCH SCHEDULE 40 PVC CONDUIT – CONCRETE ENCASED UNDER MILL/OVERLAY PAVEMENT | 75 | 100 | 175 | LF |
| L-110-4 | 2 WAY 2-INCH SCHEDULE 40 PVC CONDUIT - DIRECT EARTH BURIED | 550 | 100 | 650 | LF |
| L-110-5 | 2 WAY 2-INCH SCHEDULE 80 HDPE DIRECTIONAL DRILL | 400 | 0 | 400 | LF |
| L-115-1 | JUNCTION CAN PLAZA - 2 L-867D BASE CANS | 4 | 2 | 6 | EA |
| L-125-1 | L-861T(L) LED TAXIWAY EDGE LIGHT – BASE MOUNTED IN TURF | 40 | 49 | 89 | EA |
| L-125-2 | L-861T(L) LED TAXIWAY EDGE LIGHT – BASE MOUNTED IN MILL/OVERLAY PAVEMENT | 2 | 0 | 2 | EA |
| L-125-3 | REINSTALL EXISTING IN-PAVEMENT LIGHT FIXTURE ON NEW BASE CAN IN MILL/OVERLAY PAVEMENT | 1 | 1 | 2 | EA |
| L-125-4 | L-858(L) LED SIGN, 1-MODULE ON A NEW CONCRETE SIGN BASE | 1 | 2 | 3 | EA |
| L-125-5 | L-858(L) LED SIGN, 2-MODULE ON A NEW CONCRETE SIGN BASE | 2 | 0 | 2 | EA |
| L-125-6 | L-858(L) LED SIGN, 3-MODULE ON A NEW CONCRETE SIGN BASE | 1 | 2 | 3 | EA |
| L-125-7 | CCR RE-CALIBRATION COORDINATION WITH ADB-SAFEGATE - CONTRACTOR | 0.5 | 0.5 | 1 | LS |
| L-125-8 | CCR RE-CALIBRATION COORDINATION WITH ADB-SAFEGATE - MANUFACTURER | 0 | 1 | 1 | AL |

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## ABBREVIATIONS

ABC - AGGREGATE BASE COURSE
ADG - AIRPLANE DESIGN GROUP
AOA - AIRCRAFT OPERATIONS AREA
APPROX. - APPROXIMATE
ARFF - AIRCRAFT RESCUE AND FIREFIGHTING
ASTM - AMERICAN SOCIETY FOR TESTING AND MATERIALS
ATCT - AIR TRAFFIC CONTROL TOWER
BOP - BOTTOM OF PIPE
BOD - BOTTOM OF DUCT
BOTT. - BOTTOM
CL/C- CENTERLINE
C - CONDUIT
CF - CUBIC FOOT
CKT - CIRCUIT
CLR - CLEARANCE
COM - COMMUNICATION
CONC - CONCRETE
CONN - CONNECTION
CONT - CONTINUOUS
CSSO - CONTRACTOR SAFETY AND SECURITY OFFICER
CY - CUBIC YARD
DBL - DOUBLE
DET - DETAIL
DIA - DIAMETER
DIAG. - DIAGONAL
DWG - DRAWING
E - EASTING
EA - EACH
EG - EXISTING GROUND
ELB - ELECTRIC SERVICE BOX/METER
EL/ELEV - ELEVATION
ELEC - ELECTRICAL
EMH - ELECTRIC MANHOLE
EOP - EDGE OF PAVEMENT
EX/EXST/EXIST - EXISTING
FAA - FEDERAL AVIATION ADMINISTRATION
FOD - FOREIGN OBJECT DEBRIS
FAR - FEDERAL AVIATION REGULATIONS
GL - GUTTER LINE
GND. - GROUND
GSE - GROUND SERVICE EQUIPMENT
GWL - GROUND WATER LEVEL
HORT - HORIZONTAL
I/C - NUMBER OF CONDUCTORS/CONDUCTOR
ID - IDENTIFICATION
I.D. - INNER DIAMETER
IE/INV - INVERT ELEVATION / INVERT
KIP - 1,000 LBS
kV - KILOVOLT
L - LIGHTING
LB - POUND
LED - LIGHT-EMITTING DIODE
LF - LINEAR FEET
LT - LEFT
MAX - MAXIMUM
MECH - MECHANICAL
MH - MANHOLE
MIN - MINIMUM
N - NORTHING
NAD - NORTH AMERICAN DATUM
NAVAIDS - NAVIGATIONAL AIDS
NLVR - NON-LICENSED VEHICLE ROAD
NO - NUMBER
NTP - NOTICE TO PROCEED
NTS - NOT TO SCALE
OC - ON CENTER
OD - OUTER DIAMETER
OFA - OBJECT FREE AREA
PAVT - PAVEMENT
PC - POINT OF CURVATURE
PCC - PORTLAND CEMENT CONCRETE
PERF - PERFORATED
PG - PROPOSED GRADE
PL - PLATE
PSF - POUNDS PER SQUARE FOOT
PSI - POUNDS PER SQUARE INCH
PT - POINT OF TANGENCY
PVI - POINT OF VERTICAL INTERSECTION
RCP - REINFORCED CONCRETE PIPE
REF - REFERENCE
REINF - REINFORCED
REQ/REQ'D - REQUIRED
RGL - RUNWAY GUARD LIGHTS
RIM - RIM ELEVATION
RON - REMAIN OVERNIGHT
RPZ - RUNWAY PROTECTION ZONE
RSA - RUNWAY SAFETY AREA
RT - RIGHT
RW - RUNWAY
S/SAN - SANITARY
SA - SAFETY AREA
SC - SECONDARY CONTAINMENT
SCH/SCHED - SCHEDULE
SD - STORM DRAIN
SDMH - STORM DRAIN MANHOLE
SHT - SHEET
SIDA - SECURITY IDENTIFICATION DISPLAY AREA
SF - SQUARE FOOT
STA - STATION
SW - SINGLE WALL
SY - SQUARE YARD
TBR - TO BE REMOVED
TDG - TAXIWAY DESIGN GROUP
TEL - TELEPHONE
TEMP - TEMPORARY
THK - THICK
T/L - TAXILANE
T.O. - TOP OF
TOC - TOP OF CONCRETE
TOD - TOP OF DUCT
TOFA - TAXIWAY OBJECT FREE AREA
TSA - TAXIWAY SAFETY AREA OR
TRANSPORTATION SECURITY ADMINISTRATION
TW - TAXIWAY
TYP - TYPICAL
UD - UNDERDRAIN
UG - UNDERGROUND
VA - VOLT-AMPS
VERT - VERTICAL
VSR - VEHICLE SERVICE ROAD
W - WATER
W/ - WITH
W/O - WITHOUT
YI - YARD INLET
YL - YARD LIGHT

RS&H
RS&H, Inc
8521 SIX FORKS RD
SUITE 400
RALEIGH, NC 27615
(919) 926-4100
www.rsandh.com

FAYETTEVILLE REGIONAL AIRPORT

TAXIWAY F AND G REHABILITATION PACKAGE

FAYETTEVILLE, NC

NOT FOR CONSTRUCTION

### REVISIONS

| NO. | DATE | ISSUED FOR |
|---|---|---|
| 1 | 06/25/2026 | ADDENDUM #02 |

| | |
|---|---|
| RS&H NO: | 1003-1830-005 |
| DATE ISSUED: | 04/02/2026 |
| DESIGN BY: | SVO |
| DRAWN BY: | ERG |
| REVIEWED BY: | AEB |

SHEET TITLE

# INDEX OF DRAWINGS AND SUMMARY OF QUANTITIES

SHEET NUMBER

# C001

BIDDING DOCUMENTS



Drawing: C:\DC\ACCDocs\RS&H\10031830005_FAY Rehab of TW F and G\Project Files\C\C001.dwg
Plotted on: 6/25/2026 4:40 PM
Plotted by: Gersack, Ella