ATTACHMENT A

AUGUSTA REGIONAL AIRPORT (AGS)
AUGUSTA-RICHMOND AVIATION COMMISSION
DESIGN NEW CONNECTOR TAXIWAY(S) AND TAXIWAY E "HOT-SPOT" MITIGATION
Engineering Design Scope of Services

JUNE 2025

PROJECT DESCRIPTION

This Scope of Services details the preliminary design, 60% design, 90% design, final design, and bid administration services to be provided by MEAD & HUNT, INC. (CONSULTANT), for the New Connector Taxiway(s) and Taxiway E "Hot-Spot" Mitigation (PROJECT) at the Augusta Regional Airport (Airport) for the Augusta-Richmond County Aviation Commission (OWNER).

BACKGROUND

With the reconstruction of Taxiway F, the majority of AIP eligible airfield pavement will have been reconstructed or rehabilitated within the past 10 years. Per the FAA's records, the only remaining item needing to be addressed prior to funding new AIP eligible pavement or facility projects is the existing "hot spot" located at the intersection of Taxiway E and Runway 17-35. This area of taxiway is deemed as such because of the direct connection along Taxiway E through Runway 17-35. The concern is that a pilot could inadvertently create a runway incursion by simply not holding short of the Runway or maneuvering onto Taxiway A. In order to remove the existing hot spot, new connector(s) must be designed and constructed to alleviate congestion and provide an outlet to/from Runway 17/35. In 2022, after conversations surrounding projects in the near future, several exhibits were drafted and provided to the FAA depicting the potential Taxiway connectors. These taxiways have been approved within the ALP and AGS has received notice of Tentative Allocation of federal funding for design in 2025 with construction to follow in 2026. The taxiways will be designed and laid out as Taxiway Design Group (TDG) IV resulting in 50-foot-wide full-strength taxiway pavement with 20-foot paved shoulders. The overall footprint of design/construction will be approximately 64,000 square yards. Following the design of the Project, construction will be completed via a phased approach based upon the total amount of funding available in each subsequent Fiscal Year beginning in 2026.

The PROJECT is programmed by the Federal Aviation Administration (FAA) for a Fiscal Year (FY) *2025* design grant. The estimated construction budget for the entire PROJECT is approximately Twenty-Two Million Seven Hundred Twenty-Five Thousand Dollars and No Cents ($22,725,000.00). This PROJECT is anticipated to be funded by a FAA Airport Improvement Program (AIP) grant, GDOT Grant and local funds. The PROJECT will be designed to meet FAA standards and will be assembled as a single bid package. Once construction is complete on the new connector taxiways, the existing hot spot will be removed, and the remainder of Taxiway A will be constructed to the south (excluded from this scope of work).

MEAD & HUNT, INC. is the prime consultant and is hereinafter referred to as "CONSULTANT." This Scope of Services was developed by the CONSULTANT with input from the OWNER, FAA, and GDOT.

PROJECT ELEMENTS

The PROJECT will consist of the following elements:

This PROJECT includes engineering design services and development of construction documents for the proposed new Taxiway(s) A4, G2, G Extension, A Realignment, and Hot Spot removal. The CONSULTANT shall investigate and determine the preferred layout for these new connector Taxiways during the preliminary phase of the project. Prior to moving beyond the preliminary design phase, the CONSULTANT shall meet with the Sponsor and FAA to present the multiple layouts and preferred option. This preferred option will be agreed to by all parties prior to moving forward into the Final Design services phase of the project. Project limits extend approximately 500 linear feet north and south of the intersection of Runway 8-26 and 17-35, extending to Taxiway F to the west and Taxiway G to the east. Other project elements include new taxiway edge lights, guidance signs and cabling; drainage improvements; and new pavement markings.

A project graphic depicting these elements is included as **Attachment 1**.

PROJECT TEAM

The CONSULTANT will assign a Project Manager (PM) to this PROJECT to monitor continuity through each task, as described in this scope. The PM will be responsible for work performed by the CONSULTANT team. Specific project management tasks are detailed within each task.

The CONSULTANT will subcontract with the following subconsultants for specialty services:

1) NOVA Engineering and Environmental, LLC (NOVA): NOVA will perform geotechnical engineering services.

2) Aulick Engineering (Aulick): Aulick will perform drainage analysis and design as well as erosion and sedimentation control.

SCOPE OF SERVICES

The CONSULTANT's scope of work for the PROJECT will be tracked as follows:

Task 1: Preliminary Design
Task 2: 60% and 90% Design
Task 3: Final Design
Task 4: Bid Administration
Task 5: Additional Services

All tasks defined in this Scope of Services shall be performed in accordance with the terms and conditions of the PROFESSIONAL SERVICES TERM AND CONDITIONS OF AGREEMENT dated October 17, 2023 between the OWNER and the CONSULTANT.

CONSULTANT will provide the services described in the following tasks.

TASK 1 PRELIMINARY DESIGN

1.1 TASK 1 PROJECT MANAGEMENT AND COORDINATION

Project management tasks during Task 1 will consist of the following:

1.1.1 Prepare Contract and Project Setup

The PM and administrative staff will review and execute the contract between the CONSULTANT and the OWNER. The PM will establish a work breakdown structure to track task-level progress. Administrative staff will create the internal project database for finance tracking and internal project directory.

1.1.2 Prepare Project Management Plan

The PM will prepare a Project Management Plan (PMP) that will address the following project elements: Project Team Roles and Responsibilities, Document Distribution Plan, Communications Plan, Quality Control Milestone Summary, and Scope Change Management Plan.

1.1.3 Prepare Schedule

The PM will prepare a design and bidding schedule upon receiving the Notice to Proceed (NTP) from the OWNER. This schedule will be updated as preliminary design progresses, adjusting for review times by the OWNER, FAA, and GDOT.

1.1.4 Coordinate Internal Design Team

The PM will assign a design team to the PROJECT. Once a design team is established, the PM will implement a task coordination program to assign specific responsibilities to team members. Throughout the design, the PM will coordinate and monitor internal work progress.

1.1.5 Coordinate Subconsultants

The PM will prepare subcontracts/work orders for the subconsultants employed by CONSULTANT for the PROJECT upon receiving the NTP from the OWNER. Once subcontracts/work orders are executed, the PM will coordinate subconsultant work efforts. The PM will coordinate with the OWNER for subconsultant field activities and monitor subconsultant work progress.

1.1.6 Quality Control Program

The PM will create and implement a quality control (QC) program. As part of this program, the PM will assign both QC and quality assurance (QA) team members to the PROJECT. The PM will prepare a detailed QC checklist that will be shared with the internal design team.

1.1.7 Project Controls

The PM will track design costs weekly. At the beginning of each month, the PM will review accrued costs from the previous month and work with accounting staff to prepare invoices for the OWNER. The invoices will be submitted per the OWNER's standard invoice requirements. The invoice will reference the percent complete of each task based on the work breakdown structure and this scope. The PM will review subconsultant invoices.

The PM will oversee the badging process for CONSULTANT and subconsultant personnel, acting as the authorized signer for staff. It is anticipated that three (3) personnel will require badging to complete the PROJECT. Badging consists of four (4) hours of badge training and two (2) hours of travel, with badging and background check fees totaling $100.00 per person.

The Project Manager will create, maintain, update and internally distribute the safety program for CONSULTANT's on-site personnel.

1.1.8 Scope Development

The CONSULTANT will develop a scope of services and fee proposal for the PROJECT and negotiate a scope of services, fee proposal, and agreement for subconsultants. The CONSULTANT will submit the initial project scope of services electronically to the OWNER and the FAA for review and comment. The CONSULTANT will revise the scope of services and send it electronically along with a blank fee spreadsheet in Excel format to the OWNER for establishment of an independent fee estimate as required by *Section 300 – Procurement of Professional Services*, of the AIP Sponsor Guide. Transmittal to an optional third-party consultant for the independent fee estimate (IFE) will be the responsibility of the OWNER. The IFE will be a separate contract managed by the OWNER. The CONSULTANT will not have contact with the IFE consultant.

Once the IFE is complete, the CONSULTANT will provide the cost proposal and the PM will work with the OWNER to clarify the scope and fee if the project, or any task, is outside of the 10% standard margin as defined in FAA AC 150/5100-14E, *Architectural, Engineering, and Planning Consultant Services,* Section 2.14.3.

OWNER shall keep a record of negotiations as required by FAA AC 150/5100-14E.

1.2 TASK 1 PROJECT MEETINGS AND COMMUNICATION

The CONSULTANT will participate in meetings and phone calls during Task 1. Meetings and communication items will be as follows:

1.2.1 Internal Project Kickoff Meeting

The PM will conduct a meeting, up to one hour, with the internal design team (anticipated to consist of PM, Engineer III, Engineer II, Administrative Assistant, etc.), to present the PROJECT, project budget, design schedule, major project elements, and internal protocol.

1.2.2 Project Kickoff Meeting with OWNER

The CONSULTANT will prepare for and conduct a meeting, up to one and a half (1.5) hours, with the OWNER and FAA to present the PROJECT, including introductions, design schedule, and major project elements. Up to five (5) members from CONSULTANT team will attend (anticipated to consist of PM, Engineer III, Administrative Assistant, and Subconsultants). The meeting is anticipated to be held at the Airport with the FAA in teleconference. The CONSULTANT will prepare an agenda and exhibits to support the meeting. CONSULTANT team will collaborate to create meeting minutes and distribute via email to all that attended the meeting. The project kickoff meeting will consist of travel time for the following team members PM – 4 hours, Engineer III – 4 hours, Administrative Assistant – 2.5 hours.

1.2.3 Site Investigation

The CONSULTANT will perform an initial site investigation. The investigation will include the following tasks:

a. The CONSULTANT will review existing record drawings.

b. The CONSULTANT will generate a map of the Airport to use in documenting the existing conditions.

c. Up to three (3) members from CONSULTANT team (anticipated to consist of PM and Engineer II) will travel to the Airport and conduct a site investigation. This will be concurrent with the project kick-off meeting. The site investigation including travel time is anticipated to be PM – 4 hours, Engineer II -2 hours.

d. For electrical conditions, the CONSULTANT will coordinate with Airport Operations staff in advance of the site visit so that the Airport can plan for and execute temporary shut-off of the electrical circuit.

e. The OWNER will provide qualified staff to access buildings and open in-ground structures to determine utility and circuit routing.

f. The CONSULTANT team will walk the site to observe existing pavement and drainage conditions, and existing features that are within project limits.

g. Owner will provide Meggar readings of each circuit to be used or replaced in the project.

h. Existing pavement condition will not be evaluated for this project.

1.2.4 Weekly Internal Progress Meetings

The PM will conduct weekly meetings, up to one (1) hour, with the internal design team to discuss the project schedule and work progress. Up to five (5) members from CONSULTANT team (anticipated to consist of PM, Engineer II, Administrative Assistant), and one representative from each sub-consultant will attend each meeting. Up to sixteen (16) meetings are anticipated during Task 1.

1.2.5 Monthly Progress Meetings with OWNER

The CONSULTANT will conduct monthly meetings, up to one (1) hour, with the OWNER to discuss the project schedule, work progress, and coordination items. Up to two (2) members from CONSULTANT team will attend each meeting (anticipated to consist of PM and Engineer III). Up to four (4) meetings are anticipated during Task 1. The meetings will be held virtually.

1.2.6 Present Preliminary Submittal to OWNER

The CONSULTANT will prepare for and conduct a meeting, up to two (2) hours, with the OWNER to present the preliminary design submittal. Up to three (3) members from CONSULTANT team will attend (anticipated to consist of PM, Engineer III, and Engineer II). The meeting will be held in person. The CONSULTANT will prepare an agenda, exhibits and minutes to support the meeting.

1.2.7 Present Preliminary Submittal to FAA and GDOT

The CONSULTANT will prepare for and conduct a meeting, up to one (1) hour, with the FAA, GDOT, Tenants and OWNER to present the preliminary design submittal. Up to three (3) members from CONSULTANT team will attend (anticipated to consist of PM, Engineer III, and Engineer II). The meeting will be held in person. The CONSULTANT will prepare an agenda, exhibits and minutes to support the meeting.

1.2.8 General Communication with OWNER

The CONSULTANT will communicate with the OWNER throughout Task 1 via phone calls or email in addition to the meetings listed herein.

1.3 TOPOGRAPHIC SURVEYING

The CONSULTANT will conduct a topographic survey of the project limits.

1.3.1 Coordination and File Preparation (CONSULTANT)

The CONSULTANT will coordinate the work efforts to and prepare files to facilitate the topographic survey. The work will include the following subtasks:

a. CONSULTANT will prepare an exhibit showing the approximate survey limits and specific features to be surveyed. A preliminary version of this exhibit is included as **Attachment 2**.

b. CONSULTANT will coordinate with the OWNER to determine a schedule for survey fieldwork and logistics of Airport access.

1.3.2 Field Work and Drawing Preparation (by CONSULTANT)

Topographic Survey: CONSULTANT will conduct a topographic survey consisting of the following elements:

a. Attend an airfield safety training session as required by the OWNER. Daytime work will be performed on a pull-back basis. Airport staff with support from the CONSULTANT will provide escort for the survey crew and will be equipped with a radio to monitor pilot communications, if needed.

b. Tie topographic survey to NAD 83/NAVD 88 State Plane Coordinate System and existing vertical and horizontal control points, including at least two Primary Airport Control monuments (PACs).

c. Perform bench loop and traverse procedures to verify accuracy of vertical and horizontal control points.

d. Provide temporary survey control points for the plan set (minimum of four) for contractor layout during construction.

e. Survey pavement on a 25-foot grid and 25 feet along construction limits. Survey will include the pavement centerline, edge of pavement, 10 feet from edge of pavement, and 50-foot increments beyond edge of pavement. Include all grade breaks, flowlines, and taper and curve start/end.

f. Survey identifiable flow lines, grade brakes, top of bank points, pavement joins, and markings.

g. Survey location and elevations of pull boxes, catch basins, lights, airfield signs, and other structures/utilities within the survey limits.

h. Survey underground utilities at encountered structures where access is possible, and provide rim elevation, pipe sizes, pipe type, direction, and invert elevations of utilities. Survey outlet structures, including those outside of survey limits that lead into or away from the site. Survey will not perform confined space access.

i. Survey location of pavement borings.

j. Provide 3D digital terrain model (DTM) and line work for surveyed features compatible with AutoCAD Civil 3D 2022 or previous versions.

k. Upon CONSULTANT review, CONSULTANT will provide a PDF of the final topographic survey stamped and sealed by a Professional Licensed Surveyor, along with a comma delimited file (*.csv) for all points surveyed and copy of field survey notes for utilities.

l. Provide up to five (5) additional day(s) of field work (8-hour shift during daytime hours) for follow-up items.

m. [Conduct a PAPI obstacle clearance surface verification consisting of the following elements:

For purposes of the proposal, the OCS is assumed to be clear, and additional survey will not be required.

1.3.3 Convert Survey Data for CAD Software (CONSULTANT)
The CONSULTANT will analyze the topographical surveying data and prepare the data for use with computer modeling. Included are the following sub-tasks:

a. The CONSULTANT will review the survey drawing provided and compare it with notes taken during site walk, prior survey drawings, the master base map, satellite imagery, and available site photos.

b. The CONSULTANT will update the master base map drawing to replace existing line work with surveyed features. The master base map will then be the project base map to be depicted as existing conditions in the plans.

c. The CONSULTANT will review the DTM provided and check that the contours reflect the expected ground surface conditions. CONSULTANT will review survey point elevations at tie-in locations and confirm project limits.

d. The CONSULTANT will establish runway and taxiway alignments based on the surveyed runway threshold monuments and as-built data. These alignments will be depicted in the plans and used for contractor layout.

1.3.4 See scope for additional topographic survey services.

1.4 GEOTECHNICAL INVESTIGATION

The CONSULTANT will subcontract with NOVA to conduct a geotechnical investigation of the project site.

1.4.1 Coordination and Testing Requirements for NOVA (Subconsultant)
The CONSULTANT will coordinate the work efforts of NOVA and establish testing requirements for the geotechnical investigation. The work will include the following subtasks:

a. The CONSULTANT will review record drawings and geotechnical reports to gather information on existing soil conditions and pavement sections. The CONSULTANT will provide this information to NOVA to support their investigation.

b. The CONSULTANT will determine the type and frequency of geotechnical testing required for the design. The testing will consider pavement type, design methodology, type of wheel loading, and weight of design aircraft. Anticipated tests are included in NOVA's scope of work below.

c. The CONSULTANT will prepare an exhibit for NOVA showing the approximate boring locations. A preliminary version of this exhibit is included as **Attachment 3**.

d. The CONSULTANT will coordinate with the OWNER and NOVA to determine a schedule for geotechnical field work and logistics of Airport access.

1.4.2 Field Work, Laboratory Testing, and Report Preparation (Subconsultant – NOVA)
Conduct a geotechnical investigation per FAA Advisory Circular (AC) 150/5320-6G, *Airport Pavement Design and Evaluation*. The investigation will consist of the following elements:

Field Work

a. Perform utility mark-out via 811 (call811.com) in advance of field work to coordinate the location of utilities within the selected site location.

b. Attend an airfield safety training session as required by the OWNER. It is anticipated that daytime work will be required, and that airport staff and CONSULTANT staff will provide escort for the field crew. SUB will be equipped with a radio to monitor pilot communications if needed.

c. Drill Twenty-five (25) borings at a minimum depth of 10 feet (10') below the surface elevation.

d. Drill Zero (0) of pavement cores to establish existing pavement thickness in addition to borings.

e. Backfill borings under pavement and in open field with cuttings, compacted by automatic drop hammer. Core all pavement borings to provide a smooth wall to patch against.

f. Patch all pavement cores with high strength, quick setting, non-shrink mortar. Dye mortar black in asphalt pavement patches.

g. In-situ infiltration tests will not be required.

Soil Investigation and Boring Log

a. Sample, identify, and classify soils per with ASTM D420, *Standard Guide for Site Characterization for Engineering Design and Construction Purposes*, ASTM D2488, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*, and ASTM D2487, *Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)*.

b. Develop a graphic log that summarizes the results of the soil explorations that includes location, date performed, type of exploration, surface elevation, thickness of pavement section layers, depth of soil materials, sample locations and identification numbers, soil classification, water table, penetration tests, moisture content, unit weight, and remarks. Graphic logs shall be no larger than 8.5x11 format.

Soil Tests and Analysis

a. In situ moisture content and unit dry weight for split-ring samples from the borings and/or test pit (ASTM D2937). Identify in-place compaction. Twenty-five (25) total tests.

b. ASTM D421, *Standard Practice for Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants*. Twenty-five (25) total tests.

c. ASTM D 422, *Standard Test Method for Particle-Size Analysis of Soils and Existing Aggregate Base*. Twenty-five (25) total tests.

d. ASTM D 4318, *Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils*. Twenty-five (25) total tests.

e. Moisture-Density Relations of Soils. The pavements will be designed to accommodate the design aircraft (maximum takeoff weight greater than 60,000 pounds). Use ASTM Method D 1557, *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3*. If expansive soils are encountered, use ASTM D698, *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort*. Twenty-five (25) total tests.

f. Estimates of earthwork shrinkage/swell based on in-situ density test results and assumed final density values.

g. ASTM D 1883, *Standard Test Method for California Bearing Ratio of Laboratory-Compacted Soils*. Provide one (1) CBR test for each different major soil type. Refer to FAA AC 150/5320-6G, Section 2.3.9.11.3 for additional information regarding number of CBR tests. It is anticipated there will be three (3) total tests on native subgrade, and three (3) total tests on lime and/or cement stabilized subgrade (at optimum content of stabilizing agent)].

h. The area is not known or suspected to have been subject to AFFF discharge. PFOS/PFAS sampling is not required.

Geotechnical Report and Design Review

a. Prepare a draft report detailing the findings of the geotechnical investigation. The report will include a summary of the field investigation, site conditions, soil materials, groundwater analysis, recommendations for soil strength values and subgrade preparation, frost depth, potential for encountering unsuitable materials, and appendices containing the boring logs and tests performed.

b. After CONSULTANT, and OWNER review the draft report, complete the final report.

c. Review the Engineer's Design Report prepared by the CONSULTANT for conformance with the geotechnical recommendations.

1.4.3 Analyze Data (CONSULTANT)

Analyze the data from the draft report and existing previous geotechnical data, consisting of the following sub-tasks:

- Review geotechnical recommendations.
- Determine appropriate data for pavement design.
- Evaluate existing pavement sections for potential recycling and reuse.
- Evaluate shrink, swell, and consolidation potential.

1.4.4 See NOVA scope for additional geotechnical services.

1.5 PRELIMINARY PAVEMENT DESIGN

The CONSULTANT will use information obtained in the geotechnical investigation to calculate the pavement sections required to support the design aircraft using FAA AC 150/5320-6G, *Airport Pavement Design and Evaluation*. This work will consist of the following sub-tasks:

a. The CONSULTANT will develop an aircraft fleet mix. This will include reviewing FAA Traffic Flow Management System Counts (TFMSC), reviewing fleet mixes for previous projects at the Airport, obtaining OWNER input on observed aircraft operations, organizing the data into a table with aircraft type, Maximum Take-Off Weight (MTOW), and annual departures.

b. The CONSULTANT will perform pavement design using the FAA program FAARFIELD. This will include establishing an existing subgrade strength based on CBR data from the geotechnical report, inputting the fleet mix into the model, and running the program to obtain the required thicknesses for new pavement and aggregate base. CONSULTANT will evaluate up to four (4) pavement sections for use in a life-cycle cost estimate.

c. The CONSULTANT will use FAARFIELD to determine required subgrade compaction percentages at specific depths. This will be compared with geotechnical recommendations, existing soil conditions, and earthwork analysis to identify subgrade compaction requirements for the project areas.

d. The CONSULTANT will use FAARFIELD to design a paved shoulder section with the reduced aircraft loading requirements detailed in FAA AC 150/5320-6G.

e. The CONSULTANT will evaluate pavement rehabilitation options for existing pavements based on the condition observed in the site investigation and the findings of the geotechnical investigation.

1.6 PRELIMINARY GEOMETRIC DESIGN

The CONSULTANT will design runway and taxiway geometry per FAA AC 150/5300-13B, *Airport Design*. This work will consist of the following subtasks:

a. The CONSULTANT will determine centerline locations based on centerline separation requirements per FAA AC 150/5300-13B.

b. The CONSULTANT will determine standard taxiway width and fillet geometry based on the Taxiway Design Group (TDG) for the design aircraft per FAA AC 150/5300-13B.

1.7 PRELIMINARY SURFACE GRADING DESIGN

The CONSULTANT will design grading of the paved and unpaved surfaces based on compliance with FAA AC 150/5300-13B. This work will consist of the following sub-tasks:

a. The CONSULTANT will create a Digital Terrain Model (DTM) using AutoCAD Civil 3D.

b. [The CONSULTANT will design a taxiway centerline profile that will meet the longitudinal grading requirements of FAA AC 150/5300-13B.

c. The CONSULTANT will create standard cross sections indicating grades for pavement, shoulder, and unpaved areas using.

d. Tie-in locations may not conform to current standards or ultimate design. Therefore, transition zones may be required. The CONSULTANT will design a finish-grade surface for each transition area up to the adjoining pavement. The transition areas will meet FAA AC 150/5300-13B where possible while considering constructability.

e. The CONSULTANT will design unpaved infield areas to drain and tie into existing storm drain infrastructure. Grades will meet the requirements of the applicable safety areas defined in FAA AC 150/5300-13B.

1.8 PRELIMINARY STORM DRAIN DESIGN

The SUBCONSULTANT will design improvements to the storm drain system per FAA AC 150/5320-5D, *Airport Drainage Design*. This work will consist of the following sub-tasks:

a. The SUBCONSULTANT will perform an existing condition watershed analysis to determine existing flow rates that are tributary to each drainage basin.

b. The SUBCONSULTANT will evaluate the catchment areas defined in the preliminary grading design. The SUBCONSULTANT will perform a watershed analysis of the preliminary catchment areas for the design storm per FAA AC 150/5320-5D to determine peak flows.

c. The SUBCONSULTANT will design storm drainpipes to connect the new drainage structures to existing storm drain infrastructure. The SUBCONSULTANT will design the diameter, slope, and material to meet the design flow per FAA AC 150/5320-5D.

d. The SUBCONSULTANT will design an underdrain system to keep groundwater away from the pavement section. The underdrain will consist of perforated plastic pipe in a trench with porous backfill wrapped in filter fabric and will tie into existing or new storm drainpipes.

e. The PROJECT will result in a significant increase of impervious area. Stormwater impacts will be mitigated by directing runoff to open air basins and infiltration.

1.9 PRELIMINARY PAVEMENT MARKING DESIGN

a. The CONSULTANT will design pavement markings per FAA AC 150/5340-1M, *Standards for Airport Markings.*

1.10 PRELIMINARY ELECTRICAL DESIGN

The CONSULTANT will design the proposed lighting and signage system per FAA AC 150/5340-30J, *Design and Installation Details for Airport Visual Aids*. Included are the following subtasks:

a. The CONSULTANT will design edge light locations based on the proposed pavement geometry.

b. The CONSULTANT will design sign locations based on the proposed pavement geometry. The location, offset from pavement edge, and legend configuration will be per FAA AC 150/5340-18G, *Standards for Airport Sign Systems*.

c. The CONSULTANT will design a preliminary conduit and circuit layout, with junction structure locations.

d. The CONSULTANT will determine where new infrastructure will connect to existing. It is anticipated that new cable, transformers, cans, and fixtures will be installed for the PROJECT.

e. The CONSULTANT will perform a preliminary evaluation of proposed electrical loads to determine the required regulator size.

f. The CONSULTANT will determine temporary circuit routing required to facilitate construction.

1.11 PREPARE PRELIMINARY PLANS

The CONSULTANT will prepare preliminary plan sheets depicting the proposed improvements. The following is a preliminary list of drawings.

Sheet Number	Sheet Description	No. of Sheets
G-001	Cover Sheet	1
G-002	Sheet Index, Legend, and Abbreviations	1
G-020	Project Layout Plan	1
G-080	Phasing Plan	6
C-101	Demolition Plans	5
C-401	Grading and Drainage Plans	4
C-441	Drainage Improvement Plans	6
C-601	Pavement Marking Plans	5
E-201	Airfield Electrical Layout Plans	6
	Total Number of Sheets	**35**

1.12 PREPARE PRELIMINARY ENGINEER'S DESIGN REPORT

The CONSULTANT will prepare a Preliminary Engineer's Design Report (EDR) [to document the basis and findings of the preliminary design.

Elements of the EDR typically include the following:

- Introduction / Scope
- History of the Existing System
- Site Investigation (Including Photographs)
- Topographic Survey
- Geotechnical Investigation
- Design Standards
- Pavement Design (Including Fleet Mix and FAARFIELD Models)
- Geometric Design
- Surface Grading Design
- Storm Drain Design
- Pavement Marking Design
- Electrical Design (Including Load Calculations as Appendix)
- NAVAID Impacts
- Impacts to FAA-Owned Facilities
- Lighting and Signage
- Environmental Considerations (Including Environmental Documentation)
- Utility Information
- Availability of qualified and capable contractors to perform the work
- Modifications to AIP Standards (See Additional Services)
- Delineation of AIP Eligible and Ineligible Work Items
- DBE Participation

- Construction Safety and Phasing Plan / Considerations for Airport Operational Safety
- Project Schedule
- Engineer's Estimate Probable Construction Cost
- Life Cycle Cost Analysis
- Design Review Meeting Minutes

1.13 PREPARE PRELIMINARY COST ESTIMATE

1.13.1 Preliminary Earthwork Analysis

Due to the extent of grading improvements, a detailed analysis of site volumes will be required to determine excavation, fill, and off-haul quantities. The CONSULTANT will determine cut and fill volumes using AutoCAD. CONSULTANT will consider existing and proposed pavement sections and unusable vegetated surface layer unsuitable for subgrade fill material to determine effective volumes.

1.13.2 Calculate Estimated Preliminary Quantities

The CONSULTANT will calculate necessary quantities for the various work items. Quantities will be consistent with the specifications and acceptable quantity calculation practices.

1.13.3 Prepare Preliminary Cost Estimate

The CONSULTANT will provide a construction cost estimate based on record cost data and similar work using the calculated preliminary quantities. In addition to construction cost, the CONSULTANT will estimate total eligible project costs including OWNER administration, construction administration, resident engineer services, and materials testing. These additional costs will be provided to support the OWNER in the grant planning process.

1.14 SUBMIT FAA FORM 7460-1

A Notice of Proposed Construction (FAA Form 7460-1) is necessary to evaluate potential obstructions to air navigation and navigational communication facilities. Up to three (3) 7460-1 submissions are anticipated during preliminary design.

CONSULTANT will generate one (1) 7460-1 submission for the drill rig used during the geotechnical investigation. This submission will include exhibits(s) identifying equipment height and limits of work in latitude and longitude coordinates for the work area as well as timing of work.

CONSULTANT will generate one (1) 7460-1 submission for the proposed final project construction. This submission will include exhibits(s) identifying operational clearances of roads, aircraft movement areas, and structures. The exhibits will require latitude and longitude coordinates for all proposed new work.

CONSULTANT will submit the 7460-1s and related exhibits electronically through the Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) portal for FAA review.

A separate 7460 will be required for each crane to be used during construction. This operation is time-sensitive and contractor-dependent. Therefore, it is not included in this scope and must be performed by the contractor after project award.

1.15 GRANT APPLICATION ASSISTANCE

1.16 PREPARE PRELIMINARY SUBMITTAL

1.16.1 Internal QA Review

The QA staff assigned by the PM, typically at least a Senior Associate, as part of the quality control program will perform an internal review of the deliverables listed below. The review will be performed using Bluebeam software. The PM will review the QA markups, determine the corrective action, and direct the changes. The QA reviewer will backcheck resolution of comments before release of deliverables.

1.16.2 Submit Preliminary Deliverables to OWNER

The CONSULTANT will finalize assembly of the deliverables listed below and submit to the OWNER for review. The deliverables will be submitted electronically using Newforma file transfer software.

TASK 1 DELIVERABLES

1) Kickoff Meeting Agenda and Minutes – Electronic submittal
2) Design Review Meeting Agenda and Minutes – Electronic submittal
3) Preliminary Plans – Electronic submittal and one hard copy
4) Preliminary EDR (including cost estimate) – Electronic submittal and one hard copy
5) Topographic Survey and Base Mapping
6) Preliminary Geotechnical Report
7) Preliminary Drainage Report

TASK 2 60% AND 90% DESIGN

2.1 TASK 2 PROJECT MANAGEMENT AND COORDINATION

Project management tasks during Task 2 will consist of the following:

2.1.1 Update PMP

The PMP created during Task 1 will be updated to incorporate the latest project protocols.

2.1.2 Update Schedule

The schedule created during Task 1 will be updated throughout design based on review times by the OWNER and FAA.

2.1.3 Coordinate Internal Design Team

The PM will continue to coordinate and monitor internal work progress during Task 2.

2.1.4 Coordinate Subconsultants

The PM will continue to coordinate and monitor subconsultant work progress during Task 2.

2.1.5 Quality Control Program

The PM will continue to review the QC checklist, and the design team will continue to update the design log during Task 2.

The PM and assigned QC team members will regularly review work performed by the design team. Prior to finalizing the 60% and 90% submittals, the assigned QA team members will review the documents to be submitted.

2.1.6 Project Controls

The PM will continue to maintain the project budget spreadsheet, track costs weekly, and prepare invoices as defined in Task 1. It is anticipated that six (6) invoices will be prepared during Task 2.

2.2 TASK 2 PROJECT MEETINGS AND COMMUNICATION

The CONSULTANT will participate in meetings and calls during Task 2. Meetings and communication items will be as follows:

2.2.1 Weekly Internal Progress Meetings

The PM will conduct weekly meetings with the internal design team to discuss the project schedule and work progress. Up to three (3) members from CONSULTANT team will attend each meeting. Up to twenty-four (24) meetings are anticipated during Task 2.

2.2.2 Monthly Progress Meetings with OWNER

The CONSULTANT will conduct monthly meetings with the OWNER to discuss the project schedule, work progress, and coordination items. Up to three (3) members from CONSULTANT team will attend each meeting (anticipated to consist of PM, Senior Associate, and Engineer II). Up to four (4) meetings are anticipated during Task 2. The meetings will be held [in person] [virtually].

2.2.3 Present 60% and 90% Submittal to OWNER; Site Visit

The CONSULTANT will prepare for and conduct a meeting with the OWNER to present both the 60% and 90% design submittals. Up to three (3) members from CONSULTANT team will attend in-person (anticipated to consist of PM, Engineer III, and Engineer II). Both meetings are anticipated to be held at the Airport. The CONSULTANT will prepare an agenda, exhibits, and minutes to support the meeting. During the same trip, the CONSULTANT will investigate the site to document existing conditions based on specific items identified throughout the 60% and 90% design.

2.2.4 General Communication with OWNER

The CONSULTANT will communicate with the OWNER throughout Task 2 via phone calls or email in addition to the meetings listed herein.

2.3 60% AND 90% PAVEMENT DESIGN

The CONSULTANT will update the pavement design based on OWNER's, FAA's, and SUB's review of the Preliminary and 60% design documents.

The CONSULTANT will provide the Pavement Classification Rating (PCR) for new and reconstructed pavement. The PCR computations will be accomplished per FAA AC 150/5335-5D, *Standardized Method of Reporting Airport Pavement Strength – PCR*, and FAARFIELD software. The findings and recommendations of the PCR determination will be presented in the Engineer's Design Report.

2.4 60% AND 90% GEOMETRIC DESIGN

The CONSULTANT will update the geometric design based on OWNER's and FAA's review of the Preliminary and 60% design documents.

2.5 60% AND 90% SURFACE GRADING DESIGN

The CONSULTANT will refine the surface grading design based on OWNER's and FAA's review of the Preliminary and 60% design documents. The CONSULTANT will generate the surfaces to the accuracy required for construction. The design will consist of the following elements and considerations:

a. The CONSULTANT will update the DTM for the finish ground surface using AutoCAD Civil 3D.

b. The CONSULTANT will update the taxiway centerline profile.

c. The CONSULTANT will create detailed cross sections indicating grades for pavement, shoulder, and unpaved areas using Civil 3D corridors and assemblies. The cross-section slopes will be designed to meet the transverse grading requirements of AC 150/5300-13B.

d. The CONSULTANT will update the finish grade surface for each taxiway transition area.

2.6 60% AND 90% STORM DRAIN DESIGN

The SUBCONSULTANT will update the storm drain design based on OWNER review of the preliminary and 60% documents. The SUBCONSULTANT will update the plans to the accuracy required for construction. The design will consist of the following elements and considerations:

a. The SUBCONSULTANT will update the catchments and watershed analysis based on updates to the grading plan.

b. The SUBCONSULTANT will update the storm drainpipe design based on updates to the watersheds.

c. The SUBCONSULTANT will model the proposed storm drain infrastructure using AutoCAD Civil 3D pipe networks and generate plans and profiles for each storm drain.

d. The SUBCONSULTANT will perform inlet capacity calculations and determine headwater during maximum flow events.

e. The SUBCONSULTANT will update underdrain elevations based on updates to the surface and storm drain.

2.7 60% AND 90% ELECTRICAL DESIGN

CONSULTANT will perform a 60% and 90% design of the proposed lighting and signage system, per FAA AC 150/5340-30J. Included are the following sub-tasks:

a. The CONSULTANT will design the elevation of the proposed lights to match the shoulder grade. This will include developing a detail that shows how the collar elevation ties into the shoulder surface.

b. The CONSULTANT will refine the layout of proposed airfield guidance sign improvements. This updated design will include elevation analysis with respect to existing ground surface and detailed positioning of signs with respect to existing site features. The CONSULTANT will create a matrix identifying proposed sign legends.

c. The CONSULTANT will refine the conduit and circuit layout, including junction structure locations. This updated design will include specific removal and connection requirements, trench details, number, and size of conduit in each trench, number and size of cable in each conduit, type of junction structure, and counterpoise and grounding details.

d. The CONSULTANT will design sign locations based on the proposed pavement geometry. The location, offset from pavement edge, and legend configuration will be per FAA AC 150/5340-18G, *Standards for Airport Sign Systems*.

e. The CONSULTANT will design a preliminary conduit and circuit layout, with junction structure locations.

f. The CONSULTANT will determine where new infrastructure will connect to existing. It is anticipated that new cable, transformers, cans, and fixtures will be installed for the PROJECT.

g. The CONSULTANT will determine temporary circuit routing required to facilitate construction.

2.8 PREPARE 60% AND 90% PLANS

Based on OWNER and FAA review of the preliminary and 60% submittals, the CONSULTANT will update the plans for the 60% and 90% submittals. The CONSULTANT will prepare plan sheets depicting the proposed improvements. The following is a general list of drawings typical for this project type.

Sheet Number	Sheet Description	No. of Sheets
G-001	Cover Sheet	1
G-002	Sheet Index	1
G-003	Legend & Abbreviations	1
G-004	General Notes	1
G-021	Project Layout Plan	1
G-041	Survey Control Plan	1
G-061	Quantities Table	1
G-081	Construction Safety and Phasing Plans	5
G-091	Construction Safety and Phasing Details	2
B-051	Plan and Log of Soil Borings	5
C-021	Erosion Control Plans	12
C-031	Erosion Control Details	4
C-051	Demolition Plans	4
C-061	Demolition Details	1
C-081	Project Geometrics	4
C-091	Existing Conditions	1
C-101	Grading and Drainage Plan	4
C-201	Taxiway Plan and Profiles	4
C-301	Typical Sections	2
C-311	Paving Details	1
C-321	Jointing Plans	4
C-341	Jointing Details	1
C-441	Storm Drain and Underdrain Plan and Profiles	8
C-451	Storm Drain Details	3
C-651	Marking Plan	4
C-671	Marking Details	1
C-901	Cross Sections	8
E-001	Airfield Electrical Legend, Notes, and Abbreviations	1
E-101	Airfield Electrical Demolition Plans	4
E-201	Airfield Electrical Layout Plans	4
E-301	Airfield Electrical Signage and Light Plans	4
E-601	Airfield Electrical Details	3
	Total Number of Sheets	**101**

2.9 PREPARE 60% AND 90% SPECIFICATIONS

The CONSULTANT will assemble the specifications as stated below for the OWNER to use in obtaining competitive bids for the work. The documents will meet current FAA Standards for AIP-funded projects and incorporate OWNER-specific specifications/provisions when required per FAA instruction.

2.9.1 Bidding and Contract Documents

The FAA requires the following sections be included in the bidding documents for all Federally funded projects. CONSULTANT will prepare the documents based on FAA standards. Where the OWNER has additional or overlapping requirements, CONSULTANT will review the bidding and contract documents provided by the OWNER and notify the OWNER of conflicts. CONSULTANT will include applicable OWNER requirements in the bidding and contract documents. The documents must include the following sections:

- Notice to Bidders (Advertisement for Bids)
- FAA Instructions to Bidders
- Proposal Forms
- Statement of Qualifications
- Bid Schedule
- Sample Agreement
- Insurance Requirements
- Bonds and Guarantees

2.9.2 OWNER General Provisions

The CONSULTANT will coordinate with the OWNER to include the OWNER-specific General Provisions in the specification package. The CONSULTANT will perform a review to identify areas in the OWNER-specific General Provisions that may conflict with Required Federal Contract Provisions and the FAA General Contract Provisions and provide comments to the OWNER for their consideration and action.

2.9.3 Required Federal Contract Provisions

Federal laws and regulations require that specific contract provisions be included in federally funded contracts as established within the grant assurances. The CONSULTANT will prepare the Required Federal Contract Provisions. These requirements cover the following:

- Affirmative Action Requirement
- Buy American Preference
- Civil Rights
- Davis-Bacon Act Requirements
- Disadvantaged Business Enterprise
- Equal Employment Opportunity
- Federal Fair Labor Standards Act (Minimum Wage)

- Lobbying and Influencing Federal Employees
- Prohibition of Segregated Facilities
- Occupational Safety and Health Act

2.9.4 Project-Specific Special Provisions for Airport Construction

The CONSULTANT will prepare Special Provisions to address or expand on conditions specific to construction on airports. Special Provisions typically include the following items:

- General Safety Requirements, Airfield Safety and Traffic Control
- Construction Schedule Requirements
- Time Limitations
- Work Hour Limitations
- Project Sequencing and Potential Delays
- Barricades and Runway Closure Markers
- Radio Communication
- Access and Security
- Required Training
- General Site Information and Requirements
- Submittal Procedures
- Contractors Construction Superintendent Requirements
- Badging Requirements
- Gate Guard Requirements

2.9.5 FAA Standard Specifications for Construction of Airports

The CONSULTANT will prepare FAA General Contract Provisions, general construction items, and technical specifications per FAA AC 150/5370-10H, *Standard Specifications for Construction of Airports*. The following FAA Standard Specifications are expected in this PROJECT:

a. Part 1 – General Contract Provision
   i. Section 10 Definition of Terms
   ii. Section 20 Proposal Requirements and Conditions
   iii. Section 30 Award and Execution of Contract
   iv. Section 40 Scope of Work
   v. Section 50 Control of Work
   vi. Section 60 Control of Materials
   vii. Section 70 Legal Regulations and Responsibility to Public
   viii. Section 80 Execution and Progress
   ix. Section 90 Measurement and Payment

b. Part 2 – General Construction Items
   i. Item C-100, Contractor Quality Control Program (CQCP)
   ii. Item C-102, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control

iii. Item C-105, Mobilization
iv. Item C-110, Method of Estimating PWL

c. Part 3 – Sitework
   i. Item P-101, Preparation/Removal of Existing Pavements
   ii. Item P-152, Excavation, Subgrade, and Embankment
   iii. Item P-153, Controlled Low-Strength Material (CLSM)
   iv. Item P-154, Subbase Course

d. Part 4 – Base Courses
   i. Item P-209, Crushed Aggregate Base Course

e. Part 5 – Stabilized Base Courses
   i. Item P-304, Cement-Treated Aggregate Base Course (CTB)
   ii. Item P-306, Lean Concrete Base Course

f. Part 6 – Flexible Pavements
   i. Item P-401, Asphalt Mix Pavement
   ii. Item P-403, Asphalt Mix Pavement Surface Course

g. Part 7 – Rigid Pavements
   i. Item P-501, Cement Concrete Pavement

h. Part 9 – Miscellaneous
   i. Item P-605, Joint Sealants for Pavements
   ii. Item P-610, Concrete for Miscellaneous Structures
   iii. Item P-620, Runway and Taxiway Marking

i. Part 11 – Drainage
   i. Item D-701, Pipe for Storm Drains and Culverts
   ii. Item D-705, Pipe Underdrains for Airports
   iii. Item D-751, Manholes, Catch Basins, Inlets and Inspection Holes
   iv. Item D-752, Concrete Culverts, Headwalls, and Miscellaneous Drainage Structures

j. Part 12 – Turfing
   i. Item T-901, Seeding
   ii. Item T-904, Sodding
   iii. Item T-905, Topsoil

k. Part 13 – Lighting Installation
   i. Item L-108, Underground Power Cable for Airports
   ii. Item L-110, Airport Underground Electrical Duct Banks and Conduits
   iii. Item L-115, Electrical Manholes and Junction Structures
   iv. Item L-125, Installation of Airport Lighting Systems

2.10 PREPARE 60% AND 90% ENGINEER'S DESIGN REPORT

Based on OWNER and FAA review of the preliminary and 60% submittals, the CONSULTANT will update the Engineer's Design Report (EDR). The 60% and 90% EDR will further define project design considerations and track decisions made during the design process.

2.11 PREPARE 60% AND 90% COST ESTIMATE

2.11.1 60% and 90% Earthwork Analysis
The CONSULTANT will update the earthwork analysis based on the 60% and 90% design.

2.11.2 Calculate Estimated 60% and 90% Quantities
The CONSULTANT will update the quantities based on the 60% and 90% design.

2.11.3 Prepare 60% and 90% Cost Estimate
The CONSULTANT will update the cost estimate based on the 60% and 90% design.

2.12 PREPARE CONSTRUCTION SAFETY AND PHASING PLAN

2.12.1 The CONSULTANT will prepare a Construction Safety and Phasing Plan (CSPP) document in conformance with FAA Standards and FAA AC 150/5370-2G, *Operational Safety on Airports During Construction*. The final CSPP will be included in the bid documents package and generally includes the following information:

a. Overview and Purpose

b. Construction Safety Responsibility of Each Party

c. Construction Phasing, including:
- Tasking and time limitations: To establish a fair construction duration, the CONSULTANT will prepare an estimated critical-path construction schedule. The schedule will be based on productivity rates observed in similar projects. This schedule will not relieve the contractor of their responsibility to prepare a detailed schedule of work nor allow them to modify the performance durations of the contract.
- Areas and operations affected by construction.
- Wildlife management.
- Hazardous materials management.
- Inspection requirements.
- Marking and signs for access routes.
- Protection of runway and taxiway critical areas.
- Safety plan compliance document.

d. Construction Safety and Phasing Plan Sheet(s)

2.12.2 After OWNER and FAA's review and acceptance, the CSPP will be uploaded to the OEAAA online portal for FAA review and approval. CONSULTANT will generate one (1) 7460-1 submission for the proposed Construction Safety and Phasing Plan (CSPP). Submission will follow guidance provided in FAA's Standard Operating Procedure (SOP) 1.00 – FAA Evaluation of Sponsor's Construction Safety and Phasing Plans. These submissions will include exhibits identifying points-of-interest in latitude and longitude coordinates, including work site area, staging/stockpile locations, construction equipment heights, and haul routes.

2.13 PREPARE 60% AND 90% SUBMITTAL

2.13.1 Internal QA Review
The QA staff assigned by the PM as part of the quality control program will perform an internal review for the 60% and 90% submittal deliverables listed below. The review will be performed using Bluebeam software. The PM will review the QA markups, determine the corrective action, and direct the changes.

2.13.2 Independent Technical Review

2.13.3 Submit 60% and 90% Deliverables to OWNER
The CONSULTANT will finalize assembly of the 60% and 90% deliverables listed below and submit to the OWNER for review. The deliverables will be submitted electronically using Newforma file transfer software.

TASK 2 DELIVERABLES

1) Design Review Meeting Agenda and Minutes – Electronic submittal
2) 60% and 90% Plans – Electronic submittal and two (2) hard copies
3) 60% and 90% Specifications – Electronic submittal and one (1) hard copy
4) 60% and 90% EDR (including Cost Estimate) – Electronic submittal
5) CSPP – Electronic submittal

TASK 3 FINAL DESIGN

3.1 TASK 3 PROJECT MANAGEMENT AND COORDINATION

Project management tasks during Task 3 will consist of the following:

3.1.1 Update PMP
The PMP created during Task 1 will be updated to incorporate the latest project protocols.

3.1.2 Update Schedule
The schedule created during Task 1 will be updated throughout design based on review times by the OWNER and FAA.

3.1.3 Coordinate Internal Design Team
The PM will continue to coordinate and monitor internal work progress during Task 3.

3.1.4 Coordinate Subconsultants
The PM will continue to coordinate and monitor subconsultant work progress during Task 2.

3.1.5 Quality Control Program
The PM will complete the review of the QC checklist.

The PM and assigned QC team members will regularly review work performed by the design team. Prior to issuance of the final design, the assigned QA team members will review the documents to be submitted.

3.1.6 Project Controls
The PM will continue to maintain the project budget spreadsheet and, track costs weekly and prepare invoices as defined in Task 1. It is anticipated that one (1) invoices will be prepared during Task 3.

3.2 TASK 3 PROJECT MEETINGS AND COMMUNICATION

The CONSULTANT will participate in meetings and calls during Task 3. Meetings and communication items will be as follows:

3.2.1 Weekly Internal Progress Meetings
The PM will conduct weekly meetings with the internal design team to discuss the project schedule and work progress. Up to three (3) members from CONSULTANT team will attend each meeting. Up to two (2) meeting(s) are anticipated during Task 3.

3.2.2 Monthly Progress Meetings with OWNER
The CONSULTANT will conduct monthly meeting(s) with the OWNER to discuss the project schedule, work progress, and coordination items. Up to three (3) members from CONSULTANT team will attend each meeting (anticipated to consist of PM, Engineer III, and Engineer II). One (1) meeting is anticipated during Phase 3. The meeting will be held virtually.

3.2.3 General Communication with OWNER
The CONSULTANT will communicate with the OWNER throughout Task 3 via phone calls or email in addition to the meetings listed herein.

3.3 PREPARE FINAL PLANS

Based on OWNER and FAA review of the 90% submittal, the CONSULTANT will update the plans.

3.4 PREPARE FINAL SPECIFICATIONS

Based on OWNER and FAA review of the 90% submittal, the CONSULTANT will update the specifications.

3.5 PREPARE FINAL ENGINEER'S DESIGN REPORT

Based on OWNER review of the 90% submittal, the CONSULTANT will update the EDR.

3.6 PREPARE FINAL COST ESTIMATE

3.6.1 Calculate Estimated Final Quantities
The CONSULTANT will update the quantities based on the final design.

3.6.2 Prepare Final Cost Estimate
The CONSULTANT will update the cost estimate based on the final design.

3.7 PREPARE FINAL CONSTRUCTION SAFETY AND PHASING PLAN

Based on OWNER and FAA review of the 90% submittal, the CONSULTANT will update the CSPP.

3.8 PREPARE FINAL SUBMITTAL

3.8.1 Internal QC Review
The PM and QC staff assigned by the PM as part of the quality control program will perform an internal review of the final updated deliverables listed below. The review will be performed using Bluebeam software. The PM will review the QA markups, determine the corrective action, and direct the changes. The QA reviewer will backcheck resolution of comments before release of deliverables.

3.8.2 Submit Final Deliverables to OWNER
The CONSULTANT will complete assembly of the final deliverables listed below and submit to the OWNER. The deliverables will be submitted electronically using Newforma file transfer software.

TASK 3 DELIVERABLES

1) Final Plans – Electronic submittal and two (2) hard copies
2) Final Specifications – Electronic submittal and one (1) hard copies
3) Final EDR (including Cost Estimate) – Electronic submittal
4) Final CSPP – Electronic submittal and one (1) hard copies

TASK 4 BID ADMINISTRATION

4.1 TASK 4 PROJECT MANAGEMENT AND COORDINATION

Project management tasks during Task 4 will consist of the following:

4.1.1 Update Schedule
The schedule created during Task 1 will be updated to show bid administration milestones.

4.1.2 Prepare Invoices
The PM will continue to track costs weekly and prepare invoices as defined in Task 1. It is anticipated that three (3) invoices will be prepared during Task 4.

4.2 TASK 4 PROJECT MEETINGS AND COMMUNICATION

The CONSULTANT will participate in meetings and calls during Task 4. Meetings and communication items will be as follows:

4.2.1 Monthly Progress Meetings with OWNER

4.2.2 Pre-Bid Conference
The CONSULTANT will prepare for and conduct a pre-bid conference with potential contractors and the OWNER to review the PROJECT and answer questions. Up to two (2) members from CONSULTANT team will attend in-person (anticipated to consist of PM and Engineer II). The conference should be conducted at the Augusta-Richmond Procurement office and include a site visit. The OWNER will provide escort to the prospective bidders to view the project site. CONSULTANT will prepare a meeting agenda and minutes for distribution by the OWNER.

4.2.3 General Communication with OWNER
The CONSULTANT will communicate with the OWNER throughout Task 4 via phone calls or email in addition to the meetings listed herein.

4.3 ADVERTISEMENT FOR BIDS

The OWNER will be responsible for procuring and performing the advertisement for bids.

4.4 BID DOCUMENTS DISTRIBUTION

The CONSULTANT will package and supply the bidding documents to the OWNER for uploading by the OWNER on the OWNER's advertising platform.

4.5 RESPOND TO BIDDERS' QUESTIONS

During the bidding process, the CONSULTANT will clarify the bidding documents and answer questions from prospective bidders. CONSULTANT will receive bidder questions and issue responses in a formal addendum. Bidders may seek clarification of the bidding documents up to one (1) week before the bid is due.

4.6 BID ADDENDA

The CONSULTANT will prepare and issue bid addenda to interpret, clarify, or change the bidding documents during bidding. Addenda will be made available to plan holders. Up to two (2) addenda are anticipated.

4.7 BID OPENING

CONSULTANT will attend the bid opening at the site and time identified in the bid advertisement. OWNER will receive and timestamp bids.

4.8 BID REVIEW, BID TABULATION, AND COST/PRICE ANALYSIS

The OWNER will perform the initial bid review for compliance with Instructions to Bidders and determine if each bid is responsive.

The CONSULTANT will review all responsive bids for adherence to the requirements of the bidding documents. The CONSULTANT will prepare a spreadsheet of bids and bid items for each bidder. The CONSULTANT will input the as-bid unit prices into the spreadsheet and confirm mathematical computations of the bids. CONSULTANT will evaluate unit costs to check for unbalanced bids. The CONSULTANT will provide the OWNER with the name of the Apparent Low Bidder.

4.9 PREPARE RECOMMENDATION OF AWARD

The CONSULTANT will prepare a Recommendation of Award for the OWNER to accept or reject the submitted bids. If the recommendation is to award, CONSULTANT will prepare a letter for use on OWNER letterhead to send to the FAA requesting FAA concurrence with award. If the recommendation is to reject all bids, the CONSULTANT will supply an explanation for the recommendation and possible alternative actions that the OWNER might be able to pursue to complete the PROJECT.

4.10 FEDERAL GRANT CLOSEOUT REPORT

CONSULTANT will prepare a closeout report. OWNER will provide financial documents and forms for CONSULTANT to compile and submit in the report. Components of the report will include the following:

- Section I – Project Overview
    - Project Location
    - Environmental Mitigation

  - Grant "Special" Conditions
- Section II – Administrative costs incurred by OWNER, with explanation
- Section III – Engineering Design Contract
- Section IV – Not Applicable to Design-Only Grant
- Section V – Closeout Documents
  - Final Payment Summary Worksheet
  - Signed copy of FAA form SF-271
  - Signed copy of FAA form SF-425
  - DBE Participation Summary Form

4.11 PREPARE ISSUED FOR CONSTRUCTION DOCUMENTS

CONSULTANT will compile an "Issued for Construction" set of contract documents that incorporate the addenda and the answers to bidder questions issued during the bid period. CONSULTANT will delineate unawarded portions of the project, including bid alternates. The documents will be signed, sealed, and labeled "Issued for Construction".

TASK 4 DELIVERABLES

1) Bid Documents – one (1) of Hard copies
2) Bid Review, Bid Tabulation, and Cost/Price Analysis – Electronic submittal
3) Recommendation of Award – Electronic submittal
4) Federal Grant Close-out report – Electronic submittal
5) "Issued for Construction" Documents – Electronic submittal and one (1) hard copies

ADDITIONAL SERVICES

CONSULTANT will perform a cost effectiveness determination on pavements using life-cycle cost analysis (LCCA) methodology, per FAA AC 150/5320-6G, via the following steps:

1. Establish alternative design strategies.

2. Determine activity timing (analysis period that includes at least one rehabilitation of each alternative).

3. Estimate direct costs (estimate future costs in constant dollars and discount to the present using real discount rate).

The analysis period is the period of time over which alternative pavement sections are compared and is not necessarily the design life used for the pavement design. CONSULTANT will coordinate analysis periods to be evaluated with OWNER and FAA on federally funded projects. The LCCA will be documented in the Engineer's Design Report.

Routine maintenance costs, such as incidental crack sealing, have a marginal effect on net present value (NPV) and will not be analyzed. Initial construction, planned preventative maintenance, and rehabilitation costs will be analyzed. Salvage value will be based on the remaining functional life of an alternative at the end of the analysis period.

The LCCA will assume that all alternatives will achieve the desired result of a smooth, foreign object debris (FOD)-free surface with adequate profile and texture to safely operate aircraft. The LCCA will determine which design alternative results in the lowest total cost over the life of the project and what are the user-cost impacts of alternative strategies. The LCCA will utilize the most recent discount rate published by the Office of Management and Budget (OMB), as appropriate for a cost effectiveness analysis. Residual salvage values will be calculated on the straight-line depreciated value of the alternative at the end of the analysis period. The LCCA will consider the initial cost and life expectancy of the various alternatives, local materials, environmental factors, and contractor capability.

An LCCA in support of a pavement section does not ensure that funds will be available to support the initial construction.

This PROJECT is not expected to require a modification of FAA design standards; therefore, a Modification to Standards (MOS) is excluded from this scope of services.

CONSULTANT will prepare the FAA AIP Construction Grant Application and submit it electronically to OWNER for signature. Application preparation is expected to include the following:

- Application for Federal Assistance Forms and Reports (Federal 424 form)
- Application for Development Projects (Federal 5100-100 form)
- CIP/Pre-application Data Sheet
- Standard DOT Title VI Assurances
- Certification for Contracts, Grants, Loans, and Cooperative Agreements
- Airport Sponsor Assurances
- FAA Advisory Circulars Required for use in AIP Funded and PFC Approved Projects
- Sponsor Certification for Selection of Consultants
- Sponsor Certification for Project Plans and Specifications
- Sponsor Certification for Equipment/Construction Contracts
- Sponsor Certification for Construction Project Final Acceptance
- Sponsor Certification of Drug-Free Workplace
- Sponsor Certification for Certification and Disclosure Regarding Potential Conflict of Interest
- Title VI Pre-Award Sponsor Checklist
- Cost Break-out for reimbursable expenses (Owner vs FAA)

It is expected that up to three (3) submittals of the grant application will be sufficient for approval through the FAA. The stages of submittal are the preliminary grant application, final grant application after opening of bids, and corrected final after construction FAA review and project award. The post-construction grant close-out process are not included in this process.

Creating the 3-year DBE plan and establishing the DBE goal is excluded from this scope of services.

PREPARE CATEX

Preparation of a CATEX is excluded from this scope of services.

[CONSULTANT will review [and revise] [and recreate] the existing Signage and Marking Plan (S&MP). CONSULTANT will coordinate with the OWNER and their assigned FAA Part 139 Certification Inspector for review. Updates to the S&MP will be provided to the OWNER and FAA in electronic PDF format. CONSULTANT will incorporate comments received and generate a revised S&MP that includes the proposed improvements for future inclusion into the Airport Certification Manual (ACM).]

Review and recreation of the Signage and Marking Plan is excluded from this scope of services.

Attendance at, and presentation to, a project-specific Safety Risk Management Panel (SRMP) is excluded from this scope of services.

Envision® certification is not desired by the OWNER and is excluded from this scope of services.

Any requested or required services beyond this scope shall be negotiated at the unit cost rates shown in **Attachment 5**.

SERVICES TO BE PROVIDED BY THE OWNER

The OWNER and CONSULTANT agree that the following items will be provided by the OWNER. If these or any additional items are added to the CONSULTANT's scope of services, they will be considered extra services and require a negotiated fee and an amendment to the contract.

1) Payment of fees, easements, and permit fees from city, state, county, utilities, and others.

2) Outreach to tenants, ATCT, and other shareholders to convey the project goals and timing.

3) Required permits will be managed and administered by OWNER or other parties unless specifically identified in CONSULTANT scope of services. These permits may include, but are not limited to, Federal and State environmental clearances (ex: Clean Water Act 404 permit, NEPA, NPDES, Clean Air Act); public utility connection permits and review fees; construction/contractor permits (ex: hauling, erosion control, storm water, air quality, fugitive dust).

4) Conduct airfield safety training for subconsultants.

5) Access to the site for CONSULTANT and subconsultants.

6) Access to the site for prospective bidders during the bid advertisement.

7) Transmission of data to CONSULTANT such as reports, "as-built" drawings, and other information related to the PROJECT.

8) Review of draft documents from CONSULTANT within a reasonable amount of time, including review comments provided in writing. OWNER review comments from various individuals and departments shall be provided in writing and shall be returned to the CONSULTANT as a single package representing OWNER's review comments.

9) Protection of digital information or data supplied by CONSULTANT from contamination, misuse, or changes.

SERVICES TO BE EXCLUDED

The OWNER and CONSULTANT agree that the following items will be excluded from this scope. If these or any additional items are added to the CONSULTANT's scope of services, they will be considered extra services and require a negotiated fee and an amendment to the contract.

1) Expert witness testimony.

2) Incorporating and providing as-builts of the proposed work.

3) Construction Administration and support services.

4) Landscaping architecture services.

5) Ornamental fence design.

6) Architectural services for signs and structures.

7) Floodplain modifications (ex: LOMR).

8) Right-of-way engineering (ex: establishing/dissolving easements).

9) Update of Airfield Pavement Management System (APMS) with surveyed PCI data.

10) Update to Airport Land Use Compatibility Plan (ALUCP).

11) Re-design services, in the event of lack of funding, contractor pricing, bids exceeding project budget, changes in Owner or Tenant direction or proposed changes by the contractor or other issues.

SCHEDULE OF COMPLETION

A tentative design and bidding schedule is included as **Attachment 4**. The schedule assumes that the OWNER will issue a design Notice to Proceed (NTP) by May 1, 2025. Based on the current FAA grant schedule, construction of the first phase of the PROJECT is programmed for a FY 2026 AIP grant. Therefore, opening of bids is expected to occur May 2026 to align with the grant application timeline. The tentative schedule includes design and review periods and OWNER milestones for advertisement and award. Estimated durations for each applicable task is shown below:

TASK 1

1) The estimated duration to complete the preliminary submittal is eighty (80) working days after receipt of NTP from the OWNER.

TASK 2

1) The estimated duration to complete the 90% submittal is eighty (80) working days after receipt of OWNER and FAA comments on the preliminary submittal, which includes a two (2) week OWNER/FAA review period on the 60% submittal.

TASK 3

1) The estimated duration to complete the final submittal is within twenty (20) working days after receipt of OWNER and FAA comments on the 90% submittal.

TASK 4

1) The estimated duration of bidding is forty (40) working days after issuance of final submittal.

2) The CONSULTANT will submit the Recommendation of Award within five (5) working days after receipt of the bid proposal documents from the OWNER.

Design durations do not include OWNER and FAA review periods unless stated. Once the design NTP is received from the OWNER, the CONSULTANT will prepare and maintain a project schedule that includes estimated OWNER and FAA review periods.

COMPENSATION FOR SERVICES

Payment for all work outlined in scope of services: Tasks 1, 2, 3, 4, and 5 shall be a lump sum of One-Millions, Three-Hundred and Forty-Eight Thousand, Five-Hundred and Seventy-Nine dollars and forty-five cents ($1,348,579.45). This fee includes labor, materials, expenses, and incidentals necessary to complete the work as described herein. The design engineering fee is included as **Attachment 5** to this scope of services. Payments will be made monthly based on the percentage of work complete.

Billing for these tasks will be broken down on CONSULTANTS's invoices as follows:

Task 1: Preliminary Design ($347,133.95)
Task 2: 60% and 90% Design ($760,325.50)
Task 3: Final Design ($168,213.00)
Task 4: Bid Administration ($72,904.00)
Task 5: Additional Services (NA)

END OF SCOPE

Attachments

Attachment 1 – Project Graphic
Attachment 2 – Topographic Survey Limits
Attachment 3 – Approximate Boring Locations
Attachment 4 – Design Engineering Fee

Respectfully submitted,

MEAD & HUNT, INC.

Author	*Add Name*
Project Manager	Vice President