

Attachment A

SERVICES OF THE ENGINEER

INTRODUCTION

This project will include design, permitting and bidding of the Runway 18-36 rehabilitation and associated taxiways including lighting improvements and a wildlife hazard site visit at the [REDACTED]. Based on the airport's 2015 Pavement Condition Report, updated in June 2017 the runway was assessed to be on the low end of "satisfactory" condition, with a PCI of 71. After three (3) years and the City's recent need for several emergency repairs and corrective action, it is reasonable to predict that the PCI is currently below 70. This assessment put the pavement condition in the "fair" category and requires major rehabilitation or pavement construction. [REDACTED] has also recently experienced outages with select lighted signs. Megger tests on the runway and taxiway constant current regulators (CCRs) indicated low insulation resistance values on the lighting circuits. In addition, existing loads on the CCRs were determined to be at a maximum. Replacement of the runway and taxiway lighting/signing systems utilizing LED technology will remedy this deficiency for the next 15-20 years.

TASK 1 - PROJECT DEVELOPMENT AND ADMINISTRATION PHASE

The ENGINEER [REDACTED] will provide the following services:

Task 1.1 - Scoping Meeting

One (1) scoping meeting will be held at [REDACTED] and/or via conference call, with representatives from the Airport, FAA, Connecticut Airport Authority (CAA) and the ENGINEER to discuss the scope of the project, level of effort required for each task, and other concerns of the attendees. The ENGINEER will prepare meeting minutes for distribution to all attendees.

Task 1.2 - Prepare Scope of Work and Budget

The ENGINEER will prepare a draft scope of work (will not include fees) for review and comment by the Airport, FAA and CAA. The ENGINEER will incorporate comments received and resubmit to the Airport for final acceptance.

The ENGINEER will prepare a detailed fee proposal based on the final scope of work. The Airport will negotiate the project fee based on the guidelines provided in FAA Advisory Circular 150/5100-14C, *Architectural, Engineering, and Planning Consultant Services for Airport Grant Projects*. The

ENGINEER will prepare and submit a Professional Engineering Services Agreement to the Airport for review and signature that contains the final scope of work and approved project fee.

Task 1.3 – Conceptual Plans and Cost Estimate

The ENGINEER shall meet with the Airport to review project goals and objectives. The ENGINEER will provide conceptual cost estimates, for the proposed work, with supporting graphics. The estimates will provide the Airport with alternate and various levels of concepts with their associated construction costs.

Task 1.4 – Review/Evaluate Existing Data and Site Visit


The ENGINEER will compile the existing data that was prepared for previous projects at the airport that might be useful in the design of the project. The existing data will be reviewed for accuracy and completeness and to determine the feasibility of utilizing the data to prepare plans and specifications for the construction of the project. The existing data includes airfield pavement layouts, GIS Data, utility locations, conceptual layout plans, existing geotechnical data, and existing ground survey. The ENGINEER will utilize the pertinent data and information as appropriate. The ENGINEER will identify the project design criteria and visit the site to inventory the existing airport lighting/signing system.

Task 1.5 - Field Survey

The ENGINEER will conduct a field survey of the work area sufficient to prepare the project plans. The ENGINEER will prepare preliminary existing condition plans based on the field survey data. The ENGINEER will conduct a field check of the preliminary existing condition plans to verify, correct and supplement the original field data. Topographic survey will be adequate to allow generation of ½-foot contours of non-paved terrain, and 0.2-foot contours of paved facilities. Shots on existing pavement surfaces shall be taken to the nearest 0.01 feet and turf areas to the nearest 0.10-foot. Topographic survey notes will be reduced, and planimetric and contours generated from the survey data. All survey and base mapping data will be made available to the Airport in electronic format.

Task 1.6 – Geotechnical Investigations

The ENGINEER will secure the services of a geotechnical consultant to acquire the necessary soils and existing pavement investigation data, including borings, pavement cores, and test pits, as well as field and laboratory tests, to identify existing pavement conditions and subsurface soil characteristics. This project will have approximately 12 pavement cores, 12 borings at 8 feet, 2 test pits with in-situ density and moisture and color photographs. Samples collected from the test pits will have the following tests ran on them: mechanical sieve analysis, natural moisture content,

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specific gravity Atterberg limits, standard/modified proctor, and one-point laboratory CBR. The ENGINEER will provide a representative in the field to escort geotechnical contractor and assist with layout of the borings, cores and test pits (Assume 3 days.)

Task 1.7 – Runway Culvert Investigation

The ENGINEER shall investigate and perform a hydrologic study for the 36" RCP runway culvert pipe, including the upstream drainage channel, in accordance with FAA Advisory Circular 150/5320-5C – Surface Drainage Design. The ENGINEER shall prepare a draft Study Report that identifies the findings and recommendations of the drainage system investigation and the hydrologic study. The study will be submitted to the FAA, CAA and Airport for review. The ENGINEER shall incorporate comments and prepare the final Study Report.

Task 1.8 – Maintain General Agency Correspondence and Interactions

The ENGINEER will provide general correspondence between the Airport, FAA and CAA as appropriate. The correspondence shall include letters, faxes, emails and telephone calls.

Task 1.9 – Prepare Grant Applications

The ENGINEER shall prepare the 2020 Airport Improvement Program (AIP) grant application on behalf of the Airport as well as assist with the preparation of the CAA agreement.

Task 1.10 – Process Reimbursement Requests

The ENGINEER shall collect and verify project cost data and prepare FAA Reimbursement Requests (6 estimated) including CAAs final reimbursement package. The ENGINEER shall assist the Airport in the coordination and tracking of payments from FAA and CAA.

Task 1.11 – Annual Reports

The ENGINEER shall prepare on behalf of the Airport the Annual Federal Financial Reports (SF 425 and SF 271) and submit to the FAA.

Task 1.12 – Project Closeout

The ENGINEER shall prepare, analyze, and submit the Final Project Completion Reports and

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associated documentation for approval and acceptance by FAA to close out the project grant.

Task 1.13 – DBE Program

The ENGINEER shall file the annual DBE accomplishment reports and update the airports three-year DBE program for FY 2021 – 2023.

TASK 2 – DESIGN, PLANS, AND SPECIFICATIONS

Task 2.1 – Pavement Design Report

The ENGINEER shall develop a pavement design in accordance with FAA advisory circular 150/5320-6, latest edition. The pavement design shall include up to two (2) alternatives for pavement rehabilitation. Design will include documentation of traffic use of the pavement from the most recent Airport Master Plan with supplemental information from the Airport and extrapolated for the 20-year design period. The ENGINEER will use FAA software FAARFIELD to perform the design analysis. The ENGINEER shall coordinate and meet with the Airport to recommend proposed pavement structures and discuss other information presented within the pavement design report.

Task 2.2 – Construction Safety and Phasing Plans (CSPP)

The ENGINEER will prepare the CSPP document in a format required by the FAA and upload to the FAA Obstruction Evaluation / Airport Airspace analysis (OE/AAA) website. The document will address the 18 items identified in FAA Advisory Circular 150/5370-2F – *Operational Safety on Airports during Construction* and will include a completed Safety and Phasing Plan Checklist. The CSPP drawings developed for this document will be utilized in the design plans.

Task 2.3 – FAA Form 7460-1: Notice of Proposed Construction or Alteration

The ENGINEER will prepare and file Form 7460-1 electronically through the FAA OE/AAA website for both the proposed project and the most height critical construction equipment to be used on the project.

Task 2.4 – Preliminary Design Plans

The ENGINEER will prepare preliminary plans that will represent approximately 75% of the of the anticipated final design. The Airport, FAA and CAA will be provided with one (1) set of preliminary

Meriden, Meriden Municipal Airport
[REDACTED]

[REDACTED]

plans for review and comment. The following is a list of anticipated elements:

2.4.1 Construction Safety and Phasing Drawings – The ENGINEER shall prepare phasing drawings for all work efforts associated with the runway rehabilitation and associated taxiways outlining the limits of the individual work areas, construction phases, aircraft movements, phase durations, and operational requirements.

2.4.2 Runway 18-36 and Taxiway Geometry Drawings – The ENGINEER shall prepare drawings detailing the limits and depths of the proposed rehabilitation efforts. The drawings shall include typical cross sections, details and other key design data that will be required to construct the project in accordance with recommendations as noted in the Pavement Design Report.

2.4.3 Marking Drawings – The ENGINEER will develop pavement marking plans and details in accordance with requirements set forth by the AC 150-5340-1L (or most current edition).

2.4.4 Runway & Taxiway Edge Lighting and Vertical Guidance Sign Drawings – The ENGINEER shall develop drawings detailing the new Runway and Taxiway edge lights and vertical guide signs in accordance with current FAA standards. The ENGINEER shall provide design for the removal and replacement of the existing airfield lighting circuit cables and cable homeruns.

Task 2.5 – Preliminary Specifications and Estimate

The ENGINEER will prepare specifications based on the 75% design plans. The specifications will establish the requirements for the construction of the project in accordance with FAA Advisory Circular 150/5370-10 - *Standards for Specifying Construction of Airports*. In addition, the ENGINEER will prepare preliminary estimates of material quantities and construction costs for the project based on the 75% plans, specifications, and environmental permitting requirements.

The ENGINEER will review the City's front-end Contract Documents and provide edits particular to this project.

Approximately one (1) week after submission of the preliminary plans, specifications and estimate, a formal review meeting with FAA, CAA and the Airport will be held at the airport and/or via conference call to obtain comments. The ENGINEER will prepare and distribute meeting minutes to all attendees.

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Task 2.6 - Utilities Coordination

The ENGINEER will coordinate the project design with the Airport, local utility companies, and FAA, to determine the proximity of utilities within the project area. This will also include Constant Current Regulator (CCR) Load calculations to ensure the proposed design will not overload the existing Runway and Taxiway Regulators.

Task 2.7 - Engineer's Design Report


The ENGINEER will prepare a Design Report in accordance with the FAA AIP Sponsor Guide. The engineer's design report serves to document the design considerations, engineering analysis and design selections that occur early in the project design phase. The report must justify the design decisions made by the engineer. The rationale for the selections should address design aircraft requirements, economic analysis of alternate designs, site conditions and airport operational concerns. One (1) copy of the Draft Engineer's Report will be submitted to the Airport, FAA and CAA for review.

Task 2.8 – Final Plans

The ENGINEER will prepare final plans based on the preliminary plan review. The Airport, FAA and CAA will be provided with one (1) set of final plans for review and comment. The following is a list of anticipated drawings:

1. Title Sheet (1 drawing)
2. General Notes and Legend (1)
3. Construction Access Plan (1)
4. Construction Safety and Phasing Plans and Details (3)
5. Erosion and Sediment Control Plans and Details (2)
6. Existing Conditions and Survey Control Plans (2)
7. Demolition Plans (3)
8. Typical Sections (1)
9. Runway and Taxiway Geometry Plans (3)
10. Grading and Drainage Plans (3)
11. Runway and Taxiway Profiles (2)
12. Intersection Grading Plans (2)
13. Pavement Details (2)
14. Electrical Lighting/Signing Plans (3)



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- 15. Electrical Details (2)
 - 16. Marking Plans (3)
 - 17. Marking Details (2)

Task 2.9 – Final Specifications and Estimate

The ENGINEER will finalize the specifications based on comments received on the preliminary specifications and design plans. In addition, the ENGINEER will prepare an estimate of material quantities and construction costs for the project based on the final plans, specifications, and environmental permitting requirements.

Approximately one (1) week after submission of the final drawings, specifications and estimate, a formal review meeting with FAA, CAA and the Airport will be held at the airport and/or via conference call to obtain final comments. The ENGINEER will prepare and distribute meeting minutes to all attendees.

Task 2.10 – Construction Management Report

The ENGINEER will prepare a Construction Management Plan in a format required by the FAA. The plan should detail the measures and procedures to be used to comply with the quality control provisions of the construction contract, including, but not limited to, all quality control and acceptance tests required by the Sponsor Certified Specifications for the project.

Task 2.11 - Quality Control and Design Review

The ENGINEER will conduct an in-house quality control and design review meeting with experienced representatives of the ENGINEER. The ENGINEER will select staff members and will provide each of them with the opportunity to perform independent analyses of the final plans and specifications to ensure clarity, accuracy, completeness, and constructability. Subsequent to the independent reviews, a special in-house project review meeting will be conducted to discuss the findings of the individuals. The recommendations of the design review team will be incorporated into the final plans and specifications.

TASK 3 - ENVIRONMENTAL SERVICES

The project will receive federal funds, compliance with the National Environmental Policy Act is required. The following tasks will be required for compliance with the various federal, state and

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local environmental regulations.

Task 3.1 - National Environmental Policy Act

The rehabilitation of Runway 18-36 and associated taxiways are subject to documentation under the National Environmental Policy Act and the implementing FAA regulations found in FAA Order 1050.1F Policies and Procedures for Considering Environmental Impacts. These projects can meet the requirements for a categorical exclusion thus minimizing the effort for addressing NEPA. It is assumed that the projects will not have an adverse impact on protected historical/archeological resources, rare species or wetlands. Furthermore, it is assumed that all work will be restricted to airport property. If any of these assumptions are violated, the project could be elevated to a more intensive Environmental Assessment.

This task includes contact with resource protection agencies and tribal coordination to confirm the absence of significant environmental resources within the project limits. Furthermore, the responses received shall be placed into a documentation package and maintained in the project file to demonstrate compliance with the NEPA CATEX requirements. The ENGINEER will coordinate with the FAA on the tribal and historical/archeological contacts (as is typically required by the FAA).

Task 3.2 – City of ██████████ Aquifer Protection Area Agency

Work on the projects shall occur within the Aquifer Protection Area Map of the City of ██████████ Zoning Bylaws. A permit application to the City is necessary to coordinate review of the work with the Zoning Board relative to this ordinance. The Consultant will prepare the application, conduct a field meeting with City staff and will attend up to two public meetings with the Zoning Board to discuss the project. It is presumed that this task shall include a pre- and post-construction drainage analysis demonstrating no net increase in flow rates due to changes in soil cover types. Furthermore, it will be necessary to provide narrative supporting the use of various storm drainage “best management practices” that will provide for the cleaning of stormwater and protection of the aquifer. The ENGINEER will work with the City to identify and design suitable measures to provide for construction-level stormwater protection as well as long-term measures.

Task 3.3 – Stormwater Pollution Control Plan for Construction Activity Report

The Stormwater Pollution Control Plan (SWPCP) will be prepared in compliance with Connecticut Department of Energy and Environmental Protection’s (DEEP) General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit).

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Task 3.4 – Wildlife Hazard Site Visit

The intent of the Wildlife Hazard Site Visit is to provide an abbreviated analysis of an airport's wildlife hazards, determine if an Assessment is warranted, and if necessary, provide actionable information that allows the airport to expedite the mitigation of these hazards. A Qualified Airport Wildlife Biologist (QAWB) will conduct the site visit. The Site Visit will consist of three parts: (1) gathering airport information; (2) field observations; and (3) a final report with recommendations.

TASK 4 - BIDDING SERVICES

Task 4.1 - Bid Documents

Based on comments received during the Final Plans phase, complete Bid Documents will be developed which will be suitable for bidding purposes. The ENGINEER will submit electronic sealed copies of the plans, specifications and bid form to the City.

Task 4.2 - Answer Bid Questions and Issue Addenda

The ENGINEER will answer questions and provide technical advice to the City and potential bidders concerning the bid documents. The ENGINEER will prepare addenda to the bid documents to clarify, modify, or correct the bid documents at the request of the City.

Task 4.3 - Attend Pre-Bid Conference

The ENGINEER will attend a pre-bid conference to present the project to interested parties and to answer contractor questions. The ENGINEER will conduct a site visit of the project area to allow the contractors to observe the existing conditions first-hand and to ask questions regarding their observations. The ENGINEER will prepare written responses to questions that require additional information not available at the time of the pre-bid conference.

Task 4.4 - Bid Analysis, Recommendation and Award

The ENGINEER will conduct a detailed analysis of the contractors' bids for completeness and accuracy and will note omissions and discrepancies. The ENGINEER will compile a bid summary comprised of the results of the bids. The ENGINEER will write a letter to the City recommending the award or rejection of bids with appropriate justification. The ENGINEER shall include in the recommendation an evaluation of the contractor's prior work performance.



Attachment B

Fee Schedule

for

**Runway 18-36 Rehabilitation
(Design and Permitting) and
WHA Site Visit**

at

[REDACTED]

Airport

[REDACTED]

[REDACTED]

Engineering Services

Totals

Task	1	Project Development and Administration Phase	\$	76,612.41
Task	2	Design, Plans and Specifications	\$	51,003.38
Task	3	Environmental Services	\$	22,374.26
Task	4	Bidding Services	\$	16,484.12
			Total Fee \$	166,474.16

FEE SCHEDULE

Airport: [REDACTED] Port
Project: Runway 18-36 Rehabilitation

TASK 1 Project Development Phase

Task	Project Manager	Sr. Env Scientist /OAWB	Sr. Aviation Engineer	Jr. Aviation Engineer	CAD Technician	Electrical Engineer	Sr. Electrical Engineer	Surveyor	Clerical	Totals
1.1 Scoping Meeting (conference call)	4	2	2				2			10
1.2 Prepare Scope of Work and Budget	8	2	2				2			14
1.3 Conceptual Plans and Cost Estimate	6		6	8	8	8	4			40
1.4 Review/Evaluate Existing Data and Site Visit	2		2			12	12			28
1.5 Field Survey ([REDACTED] to perform survey; assume 4 days in field)	4		4	40				60		108
1.6 Geotechnical Investigations (assume Stantec site rep 3 days in field)	2		2	30						34
1.7 Runway Culvert Investigation	8	4	40	20						72
1.8 Maintain General Agency Correspondence and Interactions	20									20
1.9 Prepare Grant Applications	8		8							16
1.10 Process Reimbursement Requests (assume 5)	18		6							24
1.11 Annual Reports	4		4							8
1.12 Project Closeout	4		8							12
1.13 DBE Program	2		2						10	14
										0
								Check		400
TOTAL HOURS	90	8	86	98	8	20	20	60	10	400
Hourly Rate	\$ 65.00	\$ 65.00	\$ 49.00	\$ 30.00	\$ 28.00	\$ 49.00	\$ 60.00	\$ 49.00	\$ 25.00	
Direct Labor Cost	\$ 5,850.00	\$ 520.00	\$ 4,214.00	\$ 2,940.00	\$ 224.00	\$ 980.00	\$ 1,200.00	\$ 2,940.00	\$ 250.00	

Expenses:

Task	1.4	Mileage	1 veh/450 miles/RT from Scar., ME @ 0.575/mile @ 1 trip	\$ 258.75
	1.5	Mileage	1 veh/310 miles/RT from Alb., NY @ 0.575/mile @ 1 trip	\$ 178.25
	1.5	Mileage	1 veh/450 miles/RT from Scar., ME @ 0.575/mile @ 1 trip	\$ 258.75
	1.6	Mileage	1 veh/310 miles/RT from Alb., NY @ 0.575/mile @ 1 trip	\$ 178.25
	1.7	Mileage	1 veh/310 miles/RT from Alb., NY @ 0.575/mile @ 1 trip	\$ 178.25
	1.5	Lodging	4 nights x \$114/night (GSA rate) x 2 reps	\$ 912.00
	1.6	Lodging	3 nights x \$114/night (GSA rate) x 1 rep	\$ 342.00
	1.4	Meals	1 day x \$30/day (GSA per diem) x 2 reps	\$ 60.00
	1.5	Meals	4 days x \$61/day (GSA per diem) x 2 reps	\$ 488.00
	1.6	Meals	3 days x \$61/day (GSA per diem) x 1 rep	\$ 183.00
		Expenses Total		\$ 3,037.25

Outside Services:

Geotechnical Subconsultant	\$ 16,000.00
Outside Services Total	\$ 16,000.00

TOTAL LABOR COST	\$ 19,118.00
OVERHEAD (168.89%)	\$ 32,288.39
SUBTOTAL	\$ 51,406.39
FEE (12%)	\$ 6,168.77
TOTAL LABOR	\$ 57,575.16
TOTAL EXPENSES	\$ 3,037.25
TOTAL OUTSIDE SERVICES	\$ 16,000.00
Total Task 1 Project Development Phase	\$ 76,612.41

Airport: **Meriden-Markham Municipal Airport**
Project: **Runway 16-30 Rehabilitation**

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Task	2.4 & 2.8	Reproduction 36 drawings/set - 3 sets	\$ 400.00
Expenses Total			\$ 400.00

Outside Services Total \$ -

TOTAL LABOR COST	\$ 16,803.00
OVERHEAD (168.89%)	\$ 28,378.59
SUBTOTAL	\$ 45,181.59
FEE (12%)	\$ 5,421.79
TOTAL LABOR	\$ 50,603.38
TOTAL EXPENSES	\$ 400.00
TOTAL OUTSIDE SERVICES	\$ -
TOTAL Task 2 Design, Plans and Specifications	\$ 51,003.38

Airport: Meriden-Markham Municipal Airport
Project: Runway 18-36 Rehabilitation

TASK	4	Bidding Services
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Expenses:

Task	4.1	Reproduction 36 drawings/set - 5 sets	\$	200.00
	4.2	Mileage 1 veh/310 miles/RT from Alb., NY @ 0.575/mile @ 1 trip	\$	178.25
		Expenses Total	\$	378.25

Outside Services:

Outside Services Total	\$	-
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TOTAL LABOR COST	\$ 5,348.00
OVERHEAD (168.89%)	\$ 9,032.24
SUBTOTAL	\$ 14,380.24
FEE (12%)	\$ 1,725.63
TOTAL LABOR	\$ 16,105.87
TOTAL EXPENSES	\$ 378.25
TOTAL OUTSIDE SERVICES	\$ -
TOTAL Task 4 Bidding Services	\$ 16,484.12