

**TASK ORDER A  
ATTACHMENT TO  
CONSULTING AGREEMENT  
BETWEEN SPONSOR AND ENGINEER,  
DATED \_\_\_\_\_, 2016**

**FURTHER DESCRIPTION OF SERVICES OF ENGINEER**

1. This Attachment is made a part of and incorporated by reference into the Professional Services Agreement made on January 1, 2016, between **TOWN OF ERIE, COLORADO (Sponsor)** and **ARMSTRONG CONSULTANTS, INC., (Engineer)** providing for professional engineering services. The Consultant's Services as described in Paragraph 2 of the Consulting Agreement are amended or supplemented as indicated below and the time periods for the performance of certain services are stipulated as indicated below.

2. **LOCATION** – Erie Municipal Airport, Erie, Colorado

3. **WORK PROGRAM** – Attached

**Element 1** – *Construct Snow Removal Equipment Building*

4. **FEES** - The fees will be as noted below. (All Fixed Lump Sums except for Section IV.B)

<b>I. Project Development</b>	\$3,070.00
<b>II. Design</b>	
<b>A. Preliminary Design</b>	\$5,100.00
Design Survey	\$3,931.00
Design Geotech Investigation	\$6,160.00
Design Architect & Town of Erie Administrative Site Plan Approval	\$33,611.00
<b>B. Final Design</b>	\$4,450.00
<b>III. Bidding Services</b>	\$3,060.00
<b>IV. Construction Period Services</b>	
<b>A. Construction Administration Services</b>	\$8,700.00
<b>B. Construction Inspection Services</b>	See Attached Rate Sheet
<b>V. Project Closeout</b>	\$3,340.00
<b>Engineering Total<sup>1</sup></b>	\$80,691.00

1) Total includes estimated Construction Inspection fees listed on rate sheet

SPONSOR:  
**TOWN OF ERIE**

ENGINEER:  
**ARMSTRONG CONSULTANTS, INC.**

\_\_\_\_\_  
Tina Harris, Mayor

\_\_\_\_\_  
Dennis Corsi, President

**CONSTRUCTION INSPECTION SERVICES RATE SHEET:**

DIRECT EXPENSES					
Position	Regular Hourly Rate	Overtime Hourly Rate	Estimated Regular Hours	Estimated Overtime Hours	Estimated Total
Principal	\$232.00	-		-	-
Project Manager	\$164.00	-	38	-	\$6,232.00
Project Architect	\$125.00	-	-	-	-
Field Eng Supervisor	\$155.00	-	15	-	\$2,325.00
Resident Inspector	\$118.00	\$177.00	-	-	-
Clerical	\$84.00	\$126.00	-	-	-
ESTIMATED TOTAL DIRECT FEES					\$8,557.00
REIMBURSABLE EXPENSES					
Expense	Rate	Estimated Quantity		Estimated Total	
Per Diem	\$59/day	5		\$295.00	
Vehicle Expenses	\$0.54/mile	310		\$167.00	
Misc. Expenses	Lump Sum	\$250.00		\$250.00	
ESTIMATED TOTAL REIMBURSABLE FEES					\$712.00
TOTAL ESTIMATED CONSTRUCTION INSPECTION FEES					\$9,269.00



## PROJECT SKETCH



## I. PROJECT DEVELOPMENT

The project development phase is intended to complete the necessary preliminary actions required to initiate the project in accordance with established Federal, State and Local policies and procedures.

Activities include:

1. Conduct a pre-design meeting/scoping conference with the Sponsor, FAA and State to establish parameters for the project definition and work areas, budget, schedule, and needs for topographic survey and geotechnical investigations.
2. Develop preliminary cost estimates for the proposed work.
3. Develop a preliminary phasing plan for the work involved with the project to identify critical stages of work and estimate the overall duration of the construction work associated project. This information will be used to determine appropriate length of time for the construction contract and identify potential divisions amongst the work that may be divided into separate bid schedules.
4. Develop a draft Scope of Work narrative for review and approval. The Sponsor may be required to have an independent fee estimate (IFE) performed to validate the proposed engineering fees. The Engineer will assist the Sponsor in getting reimbursed for the cost of this IFE as part of the grant by preparing a request for reimbursement. Upon receiving approval of the scope of work narrative, engineering fees will be calculated and provided with the final Scope of Work. The Engineer will assist the Sponsor in preparing a Record of Negotiations to document the fee negotiation performed for the project.
5. Prepare final Scope of Work and Contract.
6. Prepare and submit a Categorical Exclusion (CatEx) package. Work includes soliciting proposals for cultural and biological surveys, and incorporating the findings into the CatEx package. The cost for these surveys will be billed directly to the Sponsor, however the Engineer will assist the Sponsor in getting reimbursed for this cost as part of the grant by preparing a request for reimbursement.
7. Prepare Preliminary FAA Grant Application. Preparation of the application will include the following:
  - a. Prepare the following forms: SF424 and FAA Form 5100-100
  - b. Prepare Project Narrative and Sketch
  - c. Prepare Preliminary Estimate
  - d. Prepare the Sponsor's Certifications
  - e. Attach the current Grant Assurances.

The Engineer will submit the application to the Sponsor for approval and signatures.

8. Assist in the preparation of State Aeronautics grant application.

## II. DESIGN

### A. Preliminary Design

The preliminary design phase is intended to identify and evaluate cost effective and practical solutions for the work items identified. The designer will complete its evaluation of alternatives through contacts with local authorities, field investigations and a practical design approach. The design will take advantage of local knowledge and experience and utilize expertise from recent construction projects to design a cost-effective project. Cost efficiencies will be realized in a lower initial cost and in lower long-term maintenance costs. The Project Manager will coordinate with Town of Erie Building Department throughout the design process.

Activities include:

1. Prepare requirements for the design topographical survey. Work includes establishing the limits of the work area and developing survey criteria in accordance with FAA design guidance. A surveyor subconsultant will be employed to conduct the topographical survey in accordance with the requirements developed. Coordinate the subconsultant's work schedule with airport staff.
2. Prepare requirements for the design geotechnical investigation. Work includes developing a subsurface boring layout and soil testing regimen. A geotechnical engineering subconsultant will be employed to conduct the geotechnical investigation in accordance with the requirements developed. The Engineer will coordinate the subconsultant's work schedule with airport staff. Based on preliminary information available for this project, the following is an estimate of the effort required to complete the investigation and associated testing:
  - a. Subsurface Investigation: Obtain 3 subsurface borings, 2 will be drilled to a depth of 15 feet, and 1 will be drilled to a depth of 5 feet.
  - b. Laboratory Soil Testing: Perform the following tests on the samples collected from the subsurface borings:

Test	Test Standard	No. of Tests
Soil Gradation (Dry)	ASTM C117/C136	6 each
Soil Gradation (Hydrometer)	ASTM D 422	1 each
Atterburg Limits	ASTM D 4318	2 each
Moisture-Density Relationship	ASTM D 698	1 each
In-Place Density/Moisture	AASHTO T204/ AASHTO T265	6 each
CBR Testing	ASTM D 1883	1 each
Consolidation Testing	ASTM D 2435	2 each
Soluble Sulfate Content	ASTM C 1580	1 each

- c. Additional geotechnical analysis will be performed to determine:
  - i. Bearing Capacity of Soil
  - ii. Presence of any geological hazards, constraints or moisture sensitivity
  - iii. Seismic design criteria
  - iv. Limitations or recommendations for excavations
  - v. Lateral earth pressures

3. Prepare an overall Construction Safety and Phasing Plan (CSPP) in order to maximize project constructability and operational safety. A draft CSPP will be submitted to the FAA for review and comment when the design is approximately 25-35% complete. This final CSPP will be submitted to the FAA when plans are 95% completed. The final CSPP will be coordinated, by the FAA Program Manager, with other FAA Lines of Business (LOBs). Comments received by the FAA LOBs will be incorporated into the CSPP prior to submitting the bid advertisement for the project.
4. Assist the Sponsor in obtaining a Town of Erie Administrative Site Plan Approval for the project.
5. Assist the Sponsor with the Disadvantage Business Enterprise (DBE) Plan.
  - a. Update/Develop the Sponsor's DBE Plan
  - b. Calculate a new 3-year DBE goal. Research the current State DOT certified DBE listings and area contractors to determine the availability of potential DBE contractors. Use the preliminary cost estimate, developed during the Project Development phase, to determine potential DBE work items.
  - c. Coordinate with Sponsor to assign DBE Liaison and Reconsideration officials.
  - d. Advertise developed DBE goal
  - e. Finalize the DBE plan and goals and assist the Sponsor in submitting these items to the FAA Civil Rights Office.
6. Analyze and process topographical survey data. Input raw survey data into computer aided drafting program, develop TIN surface model of existing ground contours, pavement edges, electrical system components, utilities, and any other miscellaneous items. Generate 3D contour model and prepare and process data for spot elevations, grading and drainage.
7. Review and evaluate project layout.
  - a. Verify existing ALP dimensions and data, submit pen/ink revised ALP with final SRE Building location.
  - b. Submit FAA Form 7460-1 for the chosen SRE Building location.
8. Evaluate local conditions:
  - a. Inventory local material suppliers, sources and capabilities.
  - b. Evaluate drainage conditions/requirements.
  - c. Review existing Pavement Strength Survey data.
  - d. Review existing electrical system layouts and determine system requirements.
  - e. Investigate existing sanitary sewer/septic system layout.
  - f. Identify other site utilities and potential tie-in locations
9. Prepare preliminary construction plans. Construction plans will be prepared depicting all of the work involved for Element 1. The following list of drawings will be used as a guideline. Drawings may be added or deleted during the design phase if required.

DESCRIPTION		ELEMENT 1
a	Cover Sheet	1 Sheet
b	General Notes, Legend and Survey Control	1 Sheet
c	Removals Plan	1 Sheet
d	SRE Building Layout	1 Sheet
e	SRE Building Grading Plan & Details	1 Sheet
f	SRE Building Plan and Details	1 Sheet
g	Utility Plan and Details	3 Sheets
h	Electrical Legend and Site Plan	1 Sheet
i	Lighting Plan and Details	1 Sheet
j	Power and Systems Plan and Details	1 Sheet
k	Electrical Schedules and Details	1 Sheet
l	Construction Safety and Phasing Plan	2 Sheets
TOTAL SHEET COUNT		15 Sheets

10. Prepare preliminary contract documents. The Engineer will incorporate the contract documents into the Standard Town of Erie Contract Documents including invitation for bids, instructions to bidders, proposal, equal employment opportunity clauses and applicable wage rates, construction contract agreement, performance bond, payment bond, general and special provisions and the geotechnical investigation data. Preparation will include establishing the location for the bid opening and description of the work schedule. Contract documents will be prepared as early as possible during the design phase and submitted to the FAA and Sponsor for review.
11. Prepare preliminary technical specifications. The Engineer will assemble the technical specifications necessary for the intended work. Standard FAA specifications will be utilized where possible. Additional specifications will be prepared to address work items or material that is not covered by the FAA specifications.

The standard specifications to be utilized for Element 1 may include the following items:

Item P-101	Surface Preparation
Item P-151	Clearing and Grubbing
Item P-152	Excavation and Embankment
Item P-156	Temporary Air & Water Pollution & Erosion Control
Item P-208	Crushed Aggregate Base Course
Item P-403	Plant Mix Bituminous Pavement
Item P-610	Structural Portland Cement Concrete
Item L-108	Underground Power Cable for Airports
Item L-110	Airport Underground Electrical Duct Banks and Conduits

The added technical specifications for Element 1 may include but not be limited to the following items:

Item Special-2	Removals
Item Special-6	Watering
Item Special-ESB	Equipment Storage Building

12. Prepare preliminary special provisions to address conditions that require additional clarification and/or definition beyond what is described in the standard general provisions or technical specifications. Items may include:
  - a. Project Location Information
  - b. Insurance Requirements
  - c. Contract Period and Work Schedule and Phasing
  - d. Pre-Construction Conference
  - e. Utilities
  - f. Permits, Taxes and Compliance with Laws
  - g. Field Office Requirements
  - h. Haul Roads
  - i. Testing and Staking
  - j. Airport Security, Closure of Air Operations Areas
  - k. Accident Prevention
  - l. Warranty
  - m. Construction Management Plan
  
13. Conduct preliminary review of the construction plans, technical specifications, contract documents and special provisions by submitting copies of the preliminary documents to the FAA, State and Sponsor and solicit preliminary design review comments.

## **B. Final Design**

In the final design phase, the designer will provide well-defined construction requirements, with selected bid alternatives as appropriate to solicit competitive construction bids. Construction schedules will be coordinated around good weather conditions and as little as practical interference with airport operations. The Project Manager will coordinate with Town of Erie Building Department throughout the design process.

Activities include:

### Final Design

1. Incorporate preliminary design comments and respond as necessary to requests for additional information.
2. Calculate Estimated Quantities. The Engineer will calculate all necessary quantities for the various work items in each Element.
3. Prepare Estimate of Probable Construction Cost for each Element. Using the final quantities calculated following the completion of the plans and specifications, the Engineer will prepare the construction cost estimate. The estimate will be based on information obtained from previous projects, contractors, material suppliers and other databases available.
4. Prepare Engineer's Design Report. During the preparation of the construction plans and specifications, an engineer design report will be prepared. The report will include the summary of the project, pavement, drainage design, schedule and cost estimate for the completion of the project. The design report will follow the current FAA Airports guidance where applicable. The design report will be submitted for Sponsor and FAA review. Review comments will be incorporated in the final revised report.
5. Develop work schedules for construction. This task involves dividing the construction work into schedules to allow for maximum contract award flexibility in cases of limited available funds, and allow the project to be executed in a manner that minimizes the disruption of the airport aircraft operations.
6. Submit final CSPP by uploading it to the OE/AAA website. Alternatively, at the request of the FAA PM, the CSPP may be submitted directly to the FAA PM.
7. Submit 95% design construction plans, technical specifications, contract documents and special provisions to the FAA, State and Sponsor and solicit design review comments.
8. Incorporate 95% design review comments and respond as necessary to requests for additional information.
9. Prepare and submit final plans and specifications. Copies will be submitted to the FAA and Sponsor. A final set of plans, specifications and contract documents will be prepared which incorporates revisions, modifications and corrections determined during the FAA and Sponsor's review. After final plan acceptance, plan sets will be provided to the FAA and Sponsor.
10. Prepare and/or assist with necessary forms:

- a. Sponsor Quarterly Report
- b. Strategic Event Coordination Form
- c. Standard Form 271
- d. Standard Form 425

### **III. BIDDING SERVICES**

During the bidding phase of the project, the Engineer will assist the Airport in advertising and letting the project for bid. Engineer will assist in dialogue with potential bidders to quantify bidder questions assist Sponsor in attaining economic bids.

Activities include:

1. Assist the Sponsor with advertising and interpretation of the project requirements. Plans and specifications will be available via the web site of Armstrong Consultants. The Sponsor and FAA will be given a hard copy set of the final plans, specifications and contract documents.
2. Provide technical assistance and recommendations to the Airport during construction bidding.
3. Attend and assist with pre-bid conference. Answer Contractor questions and issue necessary clarifications and addenda.
4. Attend bid opening at the date and time agreed by the Sponsor.
5. Prepare an abstract of bids, perform necessary review of the bids to determine responsiveness, and prepare award recommendation letter
6. Update preliminary Federal Grant Application prepared during Project Development phase based on bids. The Engineer will submit the application to the Sponsor for approval and signatures.
7. Assist in award notification to successful bidder and notify and return bid bonds to the unsuccessful bidders. The DBE goal and all bidding requirements will be reviewed for responsiveness. Any issues or concerns that arise from the bidding documents will be brought to the attention of the Sponsor for clarification.

#### **IV. CONSTRUCTION PERIOD SERVICES**

During the construction phase of the project, the Engineer will assist the Airport with monitoring, documenting progress for quality and cost control and overall grant administration during construction.

Activities include:

##### **A. Construction Administration Services**

1. Coordinate construction contract documents for successful bidder, including contract agreement, bond forms, certificates of inclusion, and Notice to Proceed. Review contractor's bonds, insurance certificates, construction schedules.
2. Provide Sponsor and FAA with hard copies of the Contract Documents, Specifications, and Construction Plans (digital copies upon request). Provide Contractor with hard and digital copies (one each) of the Contract Documents, Specifications, and Construction Plans; complete with all addenda.
3. Review and accept the Contractor's Safety Plan Compliance Documents prior to issuing the Notice to Proceed.
4. Conduct pre-construction conference.
5. No AGIS survey requirements are to be conducted as a part of this contract or project.
6. Identify local survey control points used for project design and layout. Engineering staff will assist, as necessary, the resident inspector and Contractor's surveyor during construction by compiling and sending supplemental information regarding issues arising related to construction surveying. Work may include developing alternative survey control based on site conditions discovered during construction and/or findings of the Contractor's surveyor.
7. Provide technical assistance and recommendations to the airport during construction.
8. Prepare change orders and supplemental agreements, if required; including appropriate cost/price analyses. All coordination of change orders will be provided by the Engineer.
9. Prepare and confirm monthly payment requests. Payment requests will be reviewed for accuracy with contractor and resident inspector. Engineer will prepare FAA payment documents for the Sponsor. The Sponsor will be required to complete the payment reimbursement through the FAA e-invoicing system.

##### **B. Construction Inspection Services**

1. Provide review of all submittals for materials to be used on the project. Review all shop drawings items as required during construction.
2. Provide a part time representative (five interim visits) to monitor and document construction progress for Element 1, confirm conformance with schedules, plans and specifications, measure and document construction pay quantities, document significant conversations or situations, document input or visits by local authorities, etc. Assist the

Sponsor with interviews of the Contractor's and Subcontractor's employees regarding Davis Bacon wage rates and the review of their weekly payroll reports.

3. Prepare and submit weekly inspection reports. Reports will be submitted to the FAA and Sponsor no later than the following week that the report refers to.
4. Conduct final project inspection with the Sponsor, FAA and the contractor. Any punch list items will be noted and coordinated with the contractor for necessary action

## **V. PROJECT CLOSEOUT**

During the project closeout phase of the project, the Engineer will assist the Sponsor with compiling all of the reports, documents, and other items necessary to successfully close out the associated grant and provide an accurate historical record for the project.

Activities include:

1. Prepare Summary of Tests report to document the acceptance testing performed on the project.
2. Assist the Sponsor with completing all necessary grant closeout certifications and forms.
3. Update Airport Layout Plan to reflect as-built conditions.
4. Prepare record drawings, indicating changes made to the design during construction. The FAA and Sponsor will each receive one copy of the record drawings in half size (11"x17") format as well as one in electronic format on a CD.
5. Prepare Final Engineers Report. The final report will follow the current FAA AIP Final Report guidance. The Final Engineer's Report must be submitted to and approved by the FAA prior to final payment authorization to the Contractor and Engineer.
6. Assist Sponsor in preparing final SF425 and SF271 forms and grant closeout letter.
7. Provide Closeout Documents to Sponsor in a Final Project Binder.