TOOELE COUNTY CORPORATON
CONTRACT # 15-07-09

JVIATION®

ENV AIP 28
Taxiway A1 Rehab

AMENDMENT NO. TEN (10) TO CONTRACT
DATED MARCH 30, 2010
BETWEEN
JVIATION, INC.
AND
TOOELE COUNTY – WENDOVER AIRPORT
WENDOVER, UT

The Sponsor and the Engineer agree to amend their contract for improvements to the Wendover Airport, Wendover, UT to include fees for engineering services. The improvement Item No. is included in the Scope of Work of the original contract. The item covered by this amendment is described as follows:

Taxiway 'A1' Rehabilitation

The Sponsor agrees to pay the Engineer for the services listed under Article II of the original contract in the following manner:

PART A - BASIC SERVICES

DESIGN

Preliminary Design ..... Lump sum of $4,976.50
Design ..... Lump sum of $56,836.00

BIDDING

Bidding..... Lump sum of $10,133.50

TOTAL BASIC SERVICES..... Lump sum of $71,946.00

Method of payment shall be as follows:

Interim payments based on work performed by the Engineer and detailed in a report submitted to the Sponsor with the request for payment. A retainer of ten percent of the total contract amount to be paid upon Notice to Proceed for construction, or, in the event the Sponsor does not elect to proceed with construction, the remaining ten percent to be paid upon receipt of request for payment from the Engineer.

PART B - SPECIAL SERVICES (SOILS AND PAVEMENT INVESTIGATIONS/TOPOGRAPHIC SURVEYS/HYDROLOGIC STUDIES/CONSTRUCTION ADMINISTRATION AND FIELD ENGINEERING)

The maximum estimated SPECIAL SERVICES engineering is as follows:

GEOTECHNICAL INVESTIGATIONS (FOR DESIGN)

Geotechnical Investigations ..... Lump sum of $14,255.00

TOPOGRAPHIC SURVEYS (FOR DESIGN)

Topographic Surveys ..... Lump sum of $4,000.00

ACCEPTANCE TESTING (FOR CONSTRUCTION)

Acceptance Testing ..... Lump sum of $30,000.00

AGIS SURVEY (FOR DESIGN AND AS-BUILT)

AGIS Survey ..... Lump sum of $10,000.00

If work is abandoned, or terminated, after obtaining approval by the Sponsor and the FAA of the final construction plans and specifications, the Sponsor shall reimburse up to 100 percent of the total lump sum as listed under PART A, and 100 percent of the invoiced costs for soils and pavement investigations, topographic surveys, and hydrological studies, or other studies as listed under PART B.

CONSTRUCTION ADMINISTRATION AND FIELD ENGINEERING

The estimated maximum for CONSTRUCTION ADMINISTRATION and FIELD ENGINEERING is:

Construction Administration ..... Lump sum of $4,403.00
Pre-Construction Coordination ..... Lump sum of $5,820.50
Construction Coordination ..... Lump sum of $69,396.50
Post Construction ..... Lump sum of $4,260.00

TOTAL SPECIAL SERVICES ..... Lump sum of $142,135.00

TOTAL ..... Lump sum of $214,081.00

Method of payment shall be as follows:

For services rendered under PART B - SPECIAL SERVICES, the Sponsor agrees to make monthly payments based upon the work performed by the Engineer, up to 90 percent of the total contract. The final ten percent of the fee shall be due and payable when the project final inspection and the construction report have been completed, and when reproducible "Record Drawings" have been submitted to the Sponsor and when the revised Airport Layout Plan has been approved by the FAA or when the construction work has terminated. The "Record Drawings" and Construction Report shall be submitted within a period of 90 days from end of construction period. This Amendment shall be considered concurrent with completion of audit.

PART C – ASSURANCES

I.

CIVIL RIGHTS ACT OF 1964, TITLE VI – CONTRACTOR CONTRACTUAL REQUIREMENTS

Reference: 49 CFR PART 21

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Engineer") agrees as follows:

- **Compliance with Regulations.** The Engineer shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

- **Nondiscrimination.** The Engineer, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Engineer shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

- **Solicitations for Subcontracts, Including Procurements of Materials and Equipment.** In all solicitations either by competitive bidding or negotiation made by the Engineer for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Engineer of the Engineer's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

- **Information and Reports.** The Engineer shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books,

records, accounts, other sources of information and its facilities as may be determined by the Sponsor or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of an Engineer is in the exclusive possession of another who fails or refuses to furnish this information, the Engineer shall so certify to the sponsor or the FAA, as appropriate, and shall set forth what efforts it has made to obtain the information.

- **Sanctions for Noncompliance.** In the event of the Engineer's noncompliance with the nondiscrimination provisions of this contract, the sponsor shall impose such contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to:

  a. Withholding of payments to the Engineer under the contract until the Engineer complies, and/or
  b. Cancellation, termination, or suspension of the contract, in whole or in part.

- **Incorporation of Provisions.** The Engineer shall include the provisions of paragraphs one through five (*Compliance with Regulations*, *Nondiscrimination*, *Solicitations for Subcontracts*, *Information and Reports*, and *Sanctions for Noncompliance*) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Engineer shall take such action with respect to any subcontract or procurement as the sponsor or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a Engineer becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Engineer may request the Sponsor to enter into such litigation to protect the interests of the sponsor and, in addition, the Engineer may request the United States to enter into such litigation to protect the interests of the United States.

II.
AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, SECTION 520 - GENERAL CIVIL RIGHTS PROVISIONS

Reference: Airport and Airway Improvement Act of 1982, Section 520;Title 49 47123;AC 150/5100-15, Para. 10.c.

The Engineer assures that it will comply with pertinent statutes, Executive orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance. This provision obligates the tenant/concessionaire/lessee or its transferee for the period during which Federal assistance is extended to the airport a program, except where Federal assistance is to provide, or is in the form of personal property or real property or interest therein or structures or improvements thereon. In these cases the provision obligates the party or any transferee for the longer of the following periods: (a) the period during which the property is used by the airport sponsor or any transferee for a purpose for which Federal assistance is extended, or for another purpose involving the provision of similar services or benefits or (b) the period during which

the airport sponsor or any transferee retains ownership or possession of the property. In the case of Engineers, this provision binds the Engineers from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

III.
DISADVANTAGED BUSINESS ENTERPRISES
Reference: 49 CFR Part 26

- **Contract Assurance (§26.13)** - The Engineer or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Engineer shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the Engineer to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate.

- **Prompt Payment (§26.29)** - The prime Engineer agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than ***Fifteen (15)*** days from the receipt of each payment the prime Engineer receives from Sponsor. The prime Engineer agrees further to return retainage payments to each subcontractor within Fifteen (15) days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Board. This clause applies to both DBE and non-DBE subcontractors.

IV.
LOBBYING AND INFLUENCING FEDERAL EMPLOYEES
Reference: 49 CFR Part 20, Appendix A

- No Federal appropriated funds shall be paid, by or on behalf of the Engineer, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant and the amendment or modification of any Federal grant.

- If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any Federal grant, the Engineer shall complete and submit Standard Form-LLL, "Disclosure of Lobby Activities," in accordance with its instructions.

V.
ACCESS TO RECORDS AND REPORTS
Reference: 49 CFR Part 18.36(i); FAA Order 5100.38

The Engineer shall maintain an acceptable cost accounting system. The Engineer agrees to provide the Sponsor, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representative's access to any books, documents, papers, and records of the Engineer which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Engineer agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

VI.
BREACH OF CONTRACT TERMS
Reference: 49 CFR Part 18.36

Any violation or breach of terms of this contract on the part of the Engineer or their subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement. The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

VII.
RIGHTS TO INVENTIONS
Reference: 49 CFR Part 18.36(i)(8); FAA Order 5100.38

All rights to inventions and materials generated under this contract are subject to regulations issued by the FAA and the Sponsor of the Federal grant under which this contract is executed.

VIII.
TRADE RESTRICTION CLAUSE
Reference: 49 CFR Part 30.13; FAA Order 5100.38

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

a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);

b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;

c. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

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

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

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

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

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

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

IX.
TERMINATION OF CONTRACT
Reference: 49 CFR Part 18.36(i)(2); FAA Order 5100.38

- The Sponsor may, by written notice, terminate this contract in whole or in part at any time, either for the Sponsor's convenience or because of failure to fulfill the contract obligations. Upon receipt of such notice services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract, whether completed or in progress, delivered to the Sponsor.

- If the termination is for the convenience of the Sponsor, an equitable adjustment in the contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed services.

- If the termination is due to failure to fulfill the Engineer's obligations, the Sponsor may take over the work and prosecute the same to completion by contract or otherwise. In such case, the Engineer shall be liable to the Sponsor for any additional cost occasioned to the Sponsor thereby.

- If, after notice of termination for failure to fulfill contract obligations, it is determined that the Engineer had not so failed, the termination shall be deemed to have been effected for the convenience of the Sponsor. In such event, adjustment in the contract price shall be made as provided in paragraph 2 of this clause.

- The rights and remedies of the sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

X.
CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

Reference: 49 CFR Part 29; FAA Order 5100.38

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

XI.
OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

Reference: 20 CFR part 1910

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

XII.
CLEAN AIR AND WATER POLLUTION CONTROL

(Reference: 49 CFR § 18.36(i)(12)) Note, when the DOT adopts 2 CFR 200, this reference will change to 2 CFR § 200 Appendix II(G))

Contractors and subcontractors agree:

a. That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;

b. To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued thereunder;

c. That, as a condition for the award of this contract, the contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;

d. To include or cause to be included in any construction contract or subcontract which exceeds $100,000 the aforementioned criteria and requirements.

XIII.
CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

(Reference: 2 CFR § 200 Appendix II (E))

- **Overtime Requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

- **Violation; Liability for Unpaid Wages; Liquidated Damages.** In the event of any violation of the clause set forth in paragraph (1) above, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 above, in the sum of $10 for each calendar day on which such individual was

required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 above.

- **Withholding for Unpaid Wages and Liquidated Damages.** The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 above.

- **Subcontractors.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 and also a clause requiring the subcontractor to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section.

XIV
FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)
Reference: 29 USC § 201, et seq.

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

XV
TEXTING WHEN DRIVING
References: Executive Order 13513, DOT Order 3902.10

In accordance with Executive Order 13513, "Federal Leadership on Reducing Text Messaging While Driving" (10/1/2009) and DOT Order 3902.10 "Text Messaging While Driving" (12/30/2009), FAA encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or sub-grant.

The Contractor must promote policies and initiatives for employees and other work personnel that decrease crashes by distracted drivers, including policies to ban text messaging while driving. The Contractor must include these policies in each third party subcontract involved on this project.

All other terms and conditions of the original contract shall remain in effect.

IN WITNESS WHEREOF, the parties hereto have affixed their signatures this 15 day of June 2015.

SPONSOR:
TOOELE COUNTY – WENDOVER AIRPORT
WENDOVER, UT

By: Wade B Bitner

Attest: Marilyn K. Sellett

COUNTY OF TOOELE
COUNTY CLERK/AUDITOR
STATE OF UTAH

ENGINEER:
JVIATION, INC.

By:

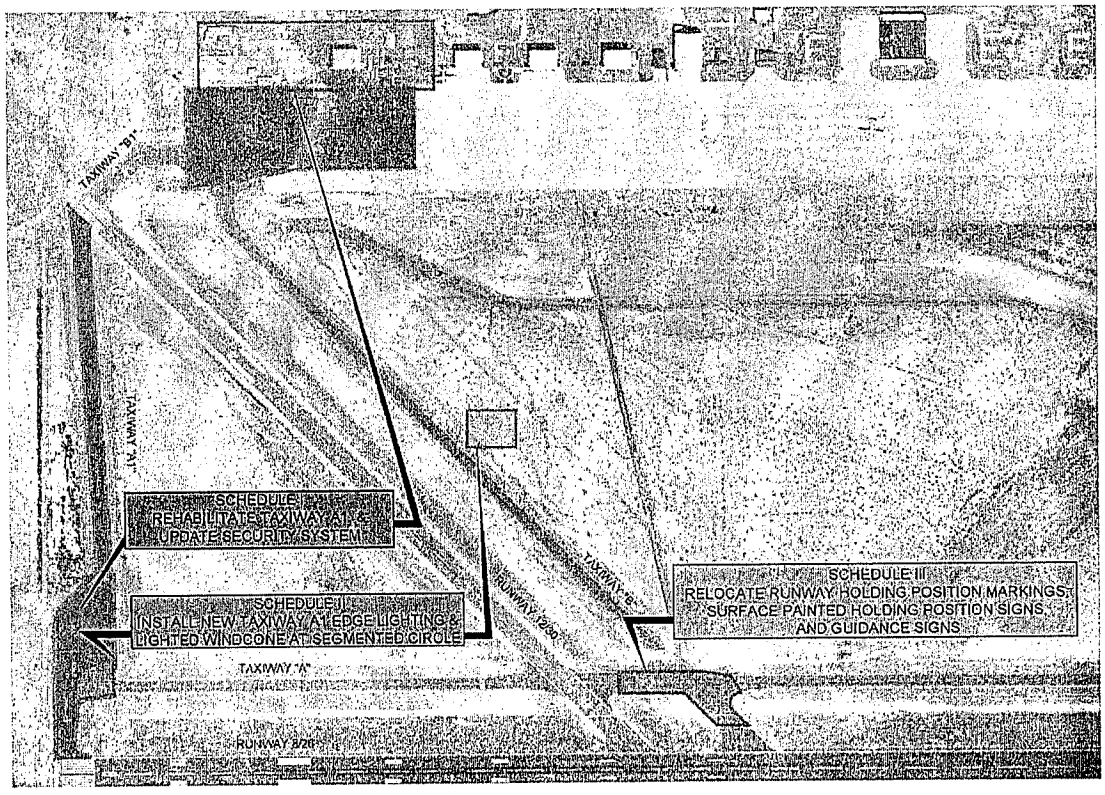
SCOPE OF WORK
FOR
WENDOVER AIRPORT
Wendover, Utah
AIP Project No. 3-49-0046-28
Rehabilitate Taxiway A1

This project will consist of preparing Construction Plans, Contract Documents, Technical Specifications and Engineer's Design Report, along with Bidding and Construction Administration, On-site Coordination, and Post Construction Coordination for the project described below.

DESCRIPTION:

Schedule I – Rehabilitate Taxiway A1, and Update Security System

This schedule will consist of rehabilitating Taxiway A1 from the approach end of Runway 12 to the approach end of Runway 8. This schedule will also consist of upgrading outdated and degraded electrical components to the perimeter security system. Runway edge striping at the approach ends and a guidance sign panel that does not meet current criteria will also be corrected as part of this schedule. Taxiway pavement, striping, construction traffic control, airfield access, and phasing will be coordinated and designed as required. Construction traffic control, airfield access, and phasing plans will be required.



Main 801.924.5800
Fax 801.924.5801
405 South Main Street | Suite 950 | Salt Lake City, UT | 84111
JVIATION.COM
ENGINEERING & PLANNING

Schedule II - Install New Taxiway A1 Edge Lighting & Lighted Windcone at Segmented Circle

This schedule will consist of removal of the existing direct earth buried wire taxiway edge lighting system and installing a new lighting system with wire encased in conduit. This schedule will also consist of removing the existing lighted windcone at the segmented circle and installation of a new one. Taxiway lighting, signage, construction traffic control, airfield access, and phasing, will be coordinated and designed as required. Construction traffic control, airfield access, and phasing plans will be required.

Schedule III - Relocate Runway Holding Position Markings, Surface Painted Holding Position Signs, and Guidance Signs

This schedule will consist of removal of existing runway holding position markings, surface painted holding position signs, and guidance signs and relocating these to new locations. These elements will be relocated at Taxiway A, immediately east of Runway 12/30, and at Taxiway B at Runway 8/26. Taxiway lighting, signage, striping, construction traffic control, airfield access, and phasing will be required. Construction traffic control, airfield access, and phasing plans will be required.

All Schedules

The Engineer will prepare conceptual configurations for the rehabilitation of Taxiway A1, the new edge lighting system for Taxiway A1, and the relocation of the holding position markings, surface painted holding position signs, and guidance signs near the intersection of Taxiway A and Taxiway B. These conceptual layouts will include proposed circulation patterns. The Engineer will coordinate with the Sponsor to determine areas where aircraft movement will be required. The plans will include all necessary guide, warning, regulatory, and circulation "signage" for the airfield. The Engineer will review existing plans and record drawings to verify existing geometry and utility layouts. Navaids, power sources, and wiring diagrams will be reviewed, and additional lighting will be designed and constructed.

In order to minimize disruptions to airport operations during construction and to limit the duration, construction will be broken into four (4) phases:

1) Rehabilitate and Install New Edge Lighting for Taxiway A1, and Install Updates for the Security System.
2) Rehabilitate and Install New Edge Lighting for Taxiway A1 within the Runway 8/26 Safety Area.
3) Rehabilitate and Install New Edge Lighting for Taxiway A1 within the Runway 12/30 Safety Area.
4) Relocate Runway Holding Position Markings, Surface Painted Holding Position Signs, and Guidance Signs.

The phasing plan proposed will be developed with help from the Airport and is intended to safely maintain aircraft movements, while imposing the least amount of impact on Contractor operations.

In order to minimize the closure time of Runway 8/26 during Phase 2, and Runway 12/30 during Phase 3, a plan will be developed to construct these phases at separate times and during scheduled nightly closures of Runway 8/26 and 24 hour/day closures of Runway 12/30. Outside of the Runway Safety Area for each runway, construction can take place safely as equipment will not protrude into any of the critical aircraft surfaces.

Construction phasing issues will be addressed to include haul routes to the project site and secured gate access to the project site.

The Engineering fees will be broken into two parts for the taxiway construction:

Part A-Basic Services; 1) Preliminary Design Phase, 2) Design Phase, and 3) Bidding Phase.

Part B-Special Services; 4) Construction Administration Phase, 5) Pre-Construction Coordination Phase, 6) On-Site Construction Coordination Phase, or Field Engineering, and 7) Post Construction Coordination Phase.

The proposed geotechnical investigation, topographical survey for design, and Quality Assurance (QA) testing will be included in **Part B–Special Services**. Parts A and B and the seven phases are described in more detail below. Based on the Engineer's preliminary cost estimate, the estimated construction cost is approximately **$1.24 million.**

PART A - BASIC SERVICES: Rehabilitate Taxiway A1

Part A - Basic Services will consist of the preliminary design phase, design phase, and bidding phase.

1.0 Preliminary Design Phase

1.1 Preliminary Meetings with the Sponsor and FAA. Meetings with the Sponsor and the FAA will take place to determine critical dates, establish the proposed design schedule, AIP development schedule and scope meeting schedule, determine the feasibility of the proposed work and to establish the need for topographical surveying and pavement investigation/geotechnical testing. Various meetings during the design phase will also be conducted to review the progress of the design and discuss construction details, proposed time frame of the construction, and special requirements of the project. It is anticipated that there will be a minimum of 1 meeting with the Sponsor and/or the FAA, with the meeting occurring in Wendover.

1.2 Prepare Project Scope of Work and Contract. This task includes establishing the scope of work through meetings with the Sponsor and the FAA. This also includes drafting the contract for the work to be completed by the Engineer for the Sponsor.

1.3 Coordinate Topographical Surveying. This task includes preparing the requirements, limits of work, and scheduling the survey. Topographical Survey will include the project limits of the taxiways and surrounding areas. The survey shall include the following:

- ✈ As-built information of the existing Runways and Taxiways.
- ✈ Other miscellaneous features required for design.

1.4 Coordinate Pavement Investigation/Geotechnical Testing. This task includes preparing the requirements for the pavement sampling and soils testing, establishing the limits of the work area, and scheduling time for testing to be completed. Negotiating with the geotechnical firm for a cost for the work and for providing the construction manager on-site during the testing procedures is also included in this item.

1.5 Prepare Federal Grant Application. This task consists of preparing the federal grant application. The application will be submitted during the initial portion of the project. Preparation of the application will include the following:

- Prepare Federal 424 form
- Prepare Project Funding Summary
- Prepare Program Narrative, discussing the Purpose and Need of the work and the Method of Accomplishment
- Project Sketch (11"x17")
- Prepare Preliminary Cost Estimate
- Exhibit "A" Property Map (See Item 1.6 below)
- Prepare the Sponsors Certifications
- Attach the current Grant Assurances

The Engineer will submit the grant application to the Sponsor for approval and signatures. After obtaining the necessary signatures, the Engineer will forward a copy of the signed application to the FAA for further processing.

1.6 Update and Modify Exhibit "A" Property Map. The Engineer will review, and update, if necessary, the airport property map to include land parcels, ownership description, recording information (County records of Book and Page Numbers) and FAA interest and acquisition dates. The Exhibit "A" will have each parcel colored for easy identification. It is anticipated that there will not be any updates for this project. One copy of the Exhibit "A" (11" x 17") will be submitted with each copy of the grant application. The current AIP Project Number will be shown on the submitted Exhibit "A".

1.7 Prepare Environmental Checklist. The environmental checklist for the taxiway rehabilitation will be completed for this project. The checklist addresses how the project affects the environmental aspects as defined under federal guidelines for environmental assessments.

2.0 Design Phase

2.1 Prepare Preliminary Contract Documents. The Engineer will prepare the preliminary Contract Documents including the invitation for bids, instruction to bidders, proposal, equal employment opportunity clauses, construction contract agreement, performance bond, payment bond, and general provisions. Preparation will include establishing the location for the bid opening, dates for advertisement, and description of the work schedule. Preliminary Contract Documents will be prepared as early as possible during the design phase and submitted to the Sponsor for review by the Sponsor's attorney.

2.2 Analyze Geotechnical Investigation Data. After receiving the geotechnical investigation data, the Engineer will analyze the data, consisting of the following tasks;

- Determine appropriate data for the pavement design form(s). It is anticipated that one pavement design form for this project will be required.
- Input data for computer modeling with topographical survey data.
- Prepare geotechnical information for incorporation on the construction drawings.

2.3 Analyze Topographic Survey Data. This work includes analyzing the topographical surveying data and preparing the data for use with computer modeling. Included are the following separate tasks:

- Input raw survey data into the computer program in order to sort data into company standard layers for efficient analysis.
- Verify survey data from as-built conditions.
- Sort all data points by layers and description for computer modeling.
- Prepare Triangulated Integrated Network (TIN - surface model) of existing ground

contours, pavement edges, roadways, electrical equipment, drainage features, buildings, fences and other miscellaneous entities.
- Generate three-dimensional contour model from TIN.
- Prepare and process data for spot elevations, grading and/or paving cross sections.

2.4 Inventory Existing Utilities. This task includes reviewing record drawings and consulting with the local utility companies to identify all utilities within the project site. This will include the coordination of possible relocations, if necessary.

2.5 Prepare Preliminary Plans. Preliminary plans will be prepared depicting the project layout, existing facilities, existing utilities, electrical ducts, and grading and drainage plans for the taxiways. The following list of drawings will be used as a guideline. Additional drawings may be added during the design phase if required.

- **Cover Sheet (1 Sheet)** – Project title, project/grant numbers, funding agencies.
- **Index of Drawings, Summary of Quantities, General Notes & Master Legend (2 Sheets)** – Lists all the drawings in the plan set, approximate quantities, general notes and legends where applicable.
- **Survey Control Plan (1 Sheet)** – Depicts overall survey control for the project.
- **Construction Layout Plan (1 Sheet)** – Depicts overall airport layout and schematically identifies key project elements, including contractor access, storage and staging areas.
- **Safety Plan (1 Sheet)** – Identifies to the contractor the safety procedures for the project.
- **Construction Phasing / Operations Plan (5 Sheets)** – Identifies to the contractor the phasing requirements and operating procedures for the project.
- **Pavement Investigation Plan (1 Sheets)** – Identifies pavement data relevant to the project.
- **Demolition Sheets (4 Sheets)** – Depicts the demolition limits for the project.
- **Geometric, Grading and Drainage Sheets (3 Sheets)** – Depicts the geometric limits and site grading for the project.
- **Grading Spot Elevation Sheets (3 Sheets)** – Depicts the spot elevations for the project.
- **Typical Sections and Pavement Edge Details (2 Sheets)** – Illustrates typical cross sections for the project and will include any necessary details.
- **Cross Section Sheets (5 Sheets)** – Specific cross sections at 100 foot intervals will depict how the standard sections tie into the existing terrain.
- **Runway & Taxiway Plan and Profiles (3 Sheets)** – Plan and profiles for the centerline, right edge and left edge of proposed pavement.
- **Pavement Marking Layout Sheets (4 Sheets)** – Depicts the striping layout for the project.
- **Pavement Marking Layout Details (1 Sheet)** – Specifies the pavement striping details for the project.
- **Electrical Plan Sheets (4 Sheets)** – Depicts the electrical layout for the project, including runway and taxiway edge lighting.
- **Electrical Details (2 Sheets)** – Provides detailed information regarding the electrical plans for the project.

PLAN SET TOTALING 43 SHEETS

2.6 Prepare Preliminary Technical Specifications. The Engineer will assemble the Technical Specifications necessary for the intended work. Standard FAA specifications will be utilized where possible; with the guidance of the current edition of the FAA Advisory Circular 150/5370-10G Standards for Specifying Construction of Airports and any of the relevant Northwest Mountain Region "Notices" will be followed. Additional specifications will be prepared to address work items for materials that are not covered by the FAA specifications.

The standard specifications to be utilized will include, but not be limited to, the following items:

- Item P-151 Clearing and Grubbing
- Item P-152 Excavation and Embankment
- Item P-153 Controlled Low Strength Material
- Item P-156 Temporary Air and Water Pollution, Soil Erosion and Siltation Control
- Item P-401 Plant Mix Bituminous Pavement
- Item P-603 Bituminous Tack Coat
- Item P-610 Structural Portland Cement Concrete (May require Modification for State Mix)
- Item P-620 Runway and Taxiway Painting
- Item L-108 Underground Power Cable for Airports
- Item L-110 Airport Underground Electrical Duct Banks and Conduit

The added technical specifications will include but not be limited to the following items:

- Item P-100 Mobilization
- Item P-140 Pavement Removal
- Item P-159 Watering
- Item L-125 Installation of Airport Lighting Systems
- Division26 Electrical

Technical specifications for the security system will be developed by the Airport.

2.7. Prepare Preliminary Special Provisions. The Engineer will prepare Special Provisions to address, or expound on, conditions that require additional clarification. They will include, but are not be limited to, the following items:

- Description of Work
- Haul Roads/Project Access
- Airport Security
- Work Schedule
- Additional Quality Control Requirements
- Pre-Construction Conference
- Sequencing of the Work
- Closure of AOA's
- Accident Prevention
- Underground Cables/Utilities
- Guarantees/Insurance/Taxes/Permits
- Contracts/Subcontracts
- Additional DBE Information
- Liquidated Damages
- Construction Operational Plan
- Safety Standards and Impacts
- Additional Acceptance Testing Issues
- Grade Control and Surface Tolerance for Paving Work
- Special Testing Considerations
- Project Closeout Forms

2.8 Prepare Drainage Analysis and Storm Drainage Design. Drainage analysis will be applicable for this project. Existing grading will be utilized to the maximum extent possible and as such the existing surface drainage of the area will not be modified during this project.

2.9 Compile/Submit Permits. Special use permits that can be identified during the design phase of the project will be identified in the Special Provisions of the Contract Documents for the Contractor's benefit. The Contractor will be responsible for any special use permits including any surface discharge requirements and the Storm Water Management Construction Plan Permit. The costs for permits and/or application fees will be not waived by Tooele County.

2.10 Calculate Estimated Quantities. The Engineer will calculate all necessary quantities for the various work items. Quantities will be consistent with the specifications and acceptable quantity calculation practices.

2.11 Prepare Estimate of Probable Construction Cost. 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.

2.12 Prepare Design Engineer's Report and Modification of Standards. During the preparation of the preliminary plans and specifications, a design report will be prepared according to the current FAA Northwest Mountain Region Design Report guidelines. The report will include the summary of the project, schedule for the completion of the design, bidding and construction of the work, and a detailed description of the work. Modifications to the FAA standards, as necessary, for the project will be compiled and presented to the FAA and Sponsor early on in the design process and included in the design report. The design report will also contain any alternative design concepts that were investigated and evaluated. A Construction Operations Safety Plan and Engineer's cost estimate will be included with the report.

2.13 Plans Review at 90% Complete and Final. During various stages of the completion of the plans and specifications, the Engineer will submit a set of drawings and specifications to the Sponsor for their review, according to the design schedule. Meetings will be scheduled as required for periodic reviews including a 90% plans in hand review to make a final inspection of the project. The project will be reviewed with the FAA to obtain their concurrence with the design.

2.14 In-House Quality Control. Prior to the final set of Construction Drawings, Specifications and Contract Documents being submitted to the FAA and the Sponsor, a thorough in-house quality control review of the documents will be conducted. This process will include an independent review of the Construction Drawings, Specifications and Contract Documents being submitted, by a licensed Engineer, other than the Engineer whom performed the design of the project, comments offered by the Engineer that performed the review and revisions to the Construction Drawings, Specifications and Contract Documents accordingly.

2.15 Prepare and Submit Final Plans and Specifications. A final set of Construction Drawings (11" x 17"), Technical Specifications, Contract Documents and Engineer's Design Report will be prepared and submitted to the FAA and Sponsor. These documents shall incorporate all revisions, modifications and corrections determined during the FAA and Sponsor final review.

2.16 Update Sign and Marking Plan. The Engineer will review and update the existing Airport Sign and Marking Plan to incorporate the recent modifications.

3.0 Bidding Phase

3.1 Advertise for Bids. Required advertisement dates and bidding dates will be established. The Engineer will submit notification, on behalf of the Sponsor, to the local and selected publications for the upcoming project. Invitations for bids will be emailed to selected firms to assure local contractors, DBE firms, and material suppliers are aware of the pending project. Approximately 15 copies of the final plans and specifications will be printed for distribution to prospective contractors.

The applicable requirements under the current Wendover Airport DBE Program shall be adhered to in the solicitation.

3.2 Prepare/Conduct Pre-Bid Meeting. The Engineer will prepare for and conduct the Pre-Bid Meeting with potential contractors and the Sponsor to review the project and answer questions pertaining to the project. The meeting will be held at the airport and will include a site inspection.

3.3 Prepare Addenda. Any necessary addenda will be issued to clarify and modify the project as required, based on questions or comments that may arise from potential contractors during the bidding process. Any necessary addenda will be reviewed with the FAA and Sponsor prior to issuing. The addenda will meet all design and construction standards as required by the FAA. Addenda will be made available to the plan holders through e-mail, via PDF files, which shall include any revised plans and/or specifications, as required.

3.4 Consult with Prospective Bidders. During the bidding process, the Engineer will be available to clarify bidding issues with contractors and suppliers, and for consultation with the various entities associated with the project. This item also includes contacting bidders to generate interest in the project.

3.5 Conduct Bid Opening. The Engineer will attend and assist with a bid opening at the Tooele County offices.

3.6 Review Bid Proposals. Engineer will review all the bid proposals submitted. An analysis of the bid prices, DBE participation, and contractor's qualification for the work will be completed and tabulated. This information will be submitted to the Sponsor and FAA.

3.7 Prepare Recommendation of Award. The Engineer will prepare a Recommendation of Award for the Sponsor to accept or reject the bids, as submitted. If rejection is recommended, the Engineer will supply an explanation for their recommendation and possible alternative actions the Sponsor can pursue to complete the project.

PART B - SPECIAL SERVICES: Rehabilitate Taxiway A1

Part B - Special Services will consist of the construction administration phase; pre-construction coordination phase, on-site construction coordination phase, and post-construction/project close out phase. Also included are direct subcontract costs such as a geotechnical investigation, topographical survey for design and Quality Assurance testing for construction.

4.0 Construction Administration Phase

4.1 Prepare Construction Contract and Documents. This item accounts for the Engineer's in-house efforts during and immediately after the project construction. In agreement with the FAA, the Engineer will prepare the Notice of Award, Notice to Proceed and Contract Agreements for the Sponsor's approval and signatures. Appropriate copies will be submitted to the successful Contractor(s) for their signatures. The Engineer will make five copies of the plans and specifications for the Contractor's use during construction.

4.2 Office Assistance. Office Engineering staff, CAD personnel, and clerical staff will be required to assist the Resident Engineer(s) as necessary during construction. Specific items to be accomplished include compiling and sending additional information requested from the office to the project site, providing secondary engineering opinions on issues arising during construction, maintaining project files as necessary (field files are mirrored in the office for continuity) and various other items necessary in the day-to-day operations.

4.3 Request for Reimbursement. Request For Reimbursement (RFR) will be submitted on a monthly basis to the Sponsor for review and approval prior to the Sponsor requesting reimbursement from the appropriate agency. The Consultant will assist the Sponsor in entering the RFR into the eInvoicing system, by submitting a hard copy of the RFR with the current costs associated to the project to the Sponsor for entering into the eInvoicing system.

4.4 Weekly/Monthly Reports. The Project Manager will review progress reports weekly and monthly.

4.5 Material Submittal Review. Material submittal data will be reviewed and approved by the Resident Engineer(s) or office personnel, if the Resident Engineer(s) are unable to make final determination of compliance.

4.6 Change Orders/Supplemental Agreement. Clerical and drafting personnel will assist with change orders and supplemental agreements as necessary.

4.7 Record Drawings. All drafting for the Final Record Drawings will be prepared by the office drafting personnel. One set of half size and one full size drawings (hard copy and electronic) will be submitted to the Sponsor. One set of half size black-line drawings and one electronic copy (in acceptable format) of the documents will be provided to the FAA.

4.8 Final Construction Report. Clerical will complete the typing for the Final Construction Report. Clerical will prepare the Required Project Closeout statements. Two copies of the Construction Report, prepared according to the current Northwest Mountain Region's Construction/Final Report guidance, will be submitted to the Sponsor and one copy submitted to the FAA. It is expected that the Denver ADO will request revisions to this document following initial submittal. In addition, a digital copy of all materials will be submitted to the sponsor.

5.0 Pre-Construction Coordination Phase

5.1 Prepare Project Files. The Engineer is required to assure the construction contracts are in order, the bonds have been completed, and the Contractor has been provided with adequate copies of the construction plans. The Plans will be updated to include all addenda items issued during bidding. Clerical will prepare the quantity sheet, testing sheets, construction report format, etc.

5.2 Prepare/Conduct Pre-Construction Meeting. The Engineer will assure the pre-construction meeting has been scheduled and all necessary parties have been informed. The Engineer will establish a pre-construction meeting to review FAA requirements prior to commencing construction. The meeting will be conducted at the Airport and will include the Sponsor, FAA (if possible), Contractor, Sub-Contractors, and Airport Tenants affected by the construction.

5.3 Prepare/Submit Construction Management Plan. The Engineer shall prepare and submit the Construction Management Plan, which includes project personnel representing the Engineer, Contractor, Sponsor and Quality Acceptance and Control Testing firms, detailed inspection procedures, required submittal processes, quality control testing methods, acceptance testing methods, and final test result summary forms.

6.0 On-Site Construction Coordination Phase

This phase will consist of providing one full time lead Construction Manager. It will be the responsibility of the Construction Manager to have sufficient on-site construction coordination to ensure that the project is completed according to good construction practice and is consistent with the Engineer's direction. The construction is estimated to take 30 Calendar days. Overhead costs, travel costs, and per diem are in addition to the engineering hours expended.

6.1 Field Inspection/Coordination. The Project Manager will make on-site visits, as required, to deal with construction issues as necessary for the duration of the project. As of now, it is estimated that the Project Manager will be required to make three site visits for the project.

6.2 Resident Engineering. The Construction Manager will be on-site full time and will work approximately 12 hours per day. It is assumed that the Construction Manager will be able to complete daily documentation in the course of the 12-hour day and that total inspection on-site time is anticipated to be 30 Calendar days.

6.3 Review Construction Submittals. The construction coordination will consist of reviewing and approving the shop drawings and material submittal data from the Contractor. The Construction Manager will review copies of the Contractor's survey data for pavement grades. The Construction Manager will review other construction items for general compliance with the construction documents.

6.4 Review Contractor Payroll Forms. The Construction Manager will be required to make employee interviews and review Contractor's weekly payroll records as required by the FAA.

6.5 Calculate Construction Quantities. The Construction Manager will maintain record of the progress and will review the quantity records with the Contractor on a periodic basis.

6.6 Periodic Cost Estimates. The Construction Manager will prepare the Periodic Cost Estimates and review the quantities with the Contractor. The Engineer, Sponsor and Contractor will resolve discrepancies, or disagreements with the Contractor's records.

6.7 Prepare Daily Reports. The Construction Manager will maintain a daily log of the construction activities for the duration of time on site.

6.8 Prepare/Submit Weekly Reports. The Construction Manager will prepare a weekly status report using the FAA's standard form. The report will be submitted to the Sponsor, the FAA, and the office.

6.9 Review QC/QA Results provided by Contractor/Engineer. The Construction Manager will review and coordinate revisions by the Contractor for Quality Control and the Engineer's testing firm for Quality Assurance submittals performed as part of the acceptance testing required by FAA Standard Specifications. This will occur on a weekly basis and at project completion prior to submittal to the FAA.

6.10 Prepare Requests for Reimbursement. Engineer will utilize the cost estimates and prepare a RFR to be submitted to the Sponsor for processing.

7.0 *Post Construction Coordination Phase*

This phase will consist of project close out and site cleanup.

7.1 Conduct Final Inspection. The Engineer, along with the Sponsor and FAA (if available), will conduct the final inspection. All acceptance test summaries must be accepted by the FAA prior to final inspection.

7.2 Coordinate Final Surveys. The Engineer will coordinate with the Contractor's surveyor for the final survey upon completion of construction.

7.3 Prepare Clean-up Item List. The Engineer will assure the Contractor has removed all construction equipment and construction debris from the Airport, that all access points have been re-secured (fences repaired, gates closed and locked, keys returned, etc.) and the site is clean.

7.4 Prepare Engineering Record Drawings. The Engineer will prepare the Record Drawings indicating modifications made during construction. The actual drafting involved on these items is covered under the Construction Administration Phase of the project.

7.5 Prepare Final Construction Report. The Engineer will prepare the final Construction Report. The actual clerical work involved on this item is covered under the Construction Administration Phase of the project.

7.6 Summarize Project Costs. The Engineer will be required to obtain all administrative expenses, engineering fees and costs, surveying costs, testing cost and construction costs associated with project and assemble a total project summary. The summary will be compared with the available funding.

7.7 Assist with Project Audit. When requested by the Sponsor or FAA, the Engineer will assist with the project, or year-end audit. The Engineer will provide files requested that are pertinent to the project cost and completion.

Special Considerations

The following special considerations are required for this project but will be completed by Sub-Consultants to the Engineer:

Conduct Topographical Surveying (For Design). Survey will be required in order to complete the design for the project. Survey shall include the following:

- Verification of the existing pavement elevations and infrastructure located within the taxiway connection areas.
- The approximate area being surveyed for this project is approximately 78 acres.
- During design, there may be the need to verify other existing survey information or extend the limits of the existing survey.

Geotechnical Investigation (For Design). The existing soils shall be tested to determine the existing soil characteristics and CBR strength. This investigation will include the following:

- Visual inspection and historical documentation of the pavement areas.
- Soil boring locations and laboratory testing (approximately 20 locations).
- Soil Classification/Atterberg Limits, Liquid Limit (LL) , Plastic Limit (PL), Plasticity Index (PI)
- Moisture/Density Relations (Modified Proctor)
- Swell/Consolidation Potential
- California Bearing Ratio (CBR)
- Subgrade Modulus (k)

A final pavement report based on testing will be completed. This will include a write up with conclusions/recommendations, testing area map, and testing data.

Acceptance Testing (For Construction). The acceptance testing will be performed under the direct supervision of the Construction Manager and Resident Engineer. All acceptance test summaries must be accepted by the FAA prior to final inspection. Certified Materials Technicians

will perform the necessary material acceptance testing for the following items, as detailed in the Project Specifications:

- ✈ Item P-152 Excavation and Embankment
- ✈ Item P-154 Subbase Course
- ✈ Item P-209 Crushed Aggregate Base Course
- ✈ Item P-401 Plant Mix Bituminous Pavement
- ✈ Item P-610 Structural Portland Cement Concrete

Notice of Proposed Construction or Alteration (7460-1). The Engineer will prepare a Notice of Proposed Construction or Alteration for the construction and equipment on the current 7460-1 form.

AGIS Survey (Woolpert). As-Built survey will be uploaded to NGS via the AGIS website.

The Airports GIS project will be completed to the specifications of a Construction Airside Survey (without runway construction involved) as detailed in Table 2-1 of FAA Advisory Circular 150/5300-18B and shown in the attached Exhibit. The Airports GIS project will be an "existing data" project type. The surveys will additionally be completed in accordance with the FAA Advisory Circulars 150/5300-16A and -18B, with further guidance from the FAA Northwest Mountain Region (ANM), the Denver ADO and the Office of Airports Safety and Standards (AAS) in Washington, D.C.

Technical Approach

The scope of work to be perfbrmed is outlined in the bulleted items below, identifying the individual survey and photogrammetry activities required to complete the project.

- Field work will be completed by others.
- All field work will be tied locally to the existing PACS and SACS.
- Field work will be reduced and processed.
- Field work will be delivered as raw data, processed data and an AUTOCAD file.
- Woolpert will coordinate the project with Jviation, the Denver ADO and the airport sponsor.
- Woolpert will assist the airport sponsor and Jviation with the creation of an Airports GIS project.
- Woolpert will assist the with the field data being collected in the required State Plane Coordinate System (UT-C)
- Woolpert will ensure all line work is compliant with the Airports GIS scheme
- Woolpert will submit the As-Built data to the Airports GIS portal.

Deliverables

Woolpert will compile and submit the necessary plans, reports and data files to the FAA in a format acceptable to Airports GIS and coordinate revisions if necessary. Woolpert will develop a digital file deliverable in the appropriate format to be uploaded to the Airports GIS (http://airports-gis.faa.gov). The data file will be delivered in AutoCAD Map 3D (.dwg) format. The digital deliverable will be provided to the airport, Jviation, Inc., and the FAA through the AGIS website.

Deliverable Listing

1. Establishment of an "Existing Data" Airports GIS Project
2. Statement of Work delivered to Airports GIS for ADO approval

3. Airports GIS data file containing data required for a Construction Airside project (new taxiway) to Airports GIS & Jviation.
    a. Drawing will include new taxiways, and paint markings

As-Built Survey Requirements

This table is designed for use in two ways. First, it defines in a general fashion the task required to meet a specific objective. Each task listed is generalized and the process to complete it many contain many other pieces. Users should refer to the text of the referenced AC to ensure that all the required subtasks are completed. The second way to use this matrix is as a checklist to ensure all the required data is collected either before leaving the field or submitting the data to the FAA.

Wendover UT - (ENV) – Airports GIS As-Built Field Work Requirements

1. All work needs to tied directly to the existing PACS and SACS
2. Two static GPS sessions, 130 minutes in duration at each of the monuments.
3. All static GPS data will be collected at 15 second epoch rate. The sessions need to be simultaneously collected (2 or 3 receivers needed).
    a. FAA ENV A
    b. FAA ENV B
4. Digital photos of each mark with GPS equipment setup
    a. AC 150/5300 16A requirements
        8.2.10.2. PHOTOGRAPHIC REQUIREMENTS.
        Figure 8.5. Example of the NGS suggested Type 2 digital photograph.
        8.2.10.2.1. NUMBER OF PHOTOGRAPHS. At least three digital photographs taken during daylight hours are required for each mark recovered or described during the current project. This requirement is for marks where a written, NGS format, digital description or recovery note is prepared. For consistency within the NGS database, numbers are used to describe the three photographs. Photograph type one is an extreme close up as shown in Figure 8.4. Photograph type number two (Figure 8.5) should be taken at eye-level with the station 5 to 6 feet in the distance, and photograph type three should be taken horizontally with the station approximately 10 to 30 feet in the distance (Figure 8.6). All three photographs require a digital caption and correct file name as specified in paragraphs 8.2.10.3 and 8.2.10.4.7.3. Include a small, temporary sign in photographs two and three.
5. Log sheet on all static GPS setups.

Exhibit A: As-Built Survey Requirements

This table is designed for use in two ways. First, it defines in a general fashion the task required to meet a specific objective. Each task listed is generalized and the process to complete it many contain many other pieces. Users should refer to the text of the referenced AC to ensure that all the required subtasks are completed. The second way to use this matrix is as a checklist to ensure all the required data is collected either before leaving the field or submitting the data to the FAA.

Intended End Use of the Data ➢ Required Tasks ⩔	AC Reference	Construction	
		Airside	~~Landside~~
Provide a Survey and Quality Control Plan	150/5300-16/17/18	N/A	
Establish or validate Airport Geodetic Control	150/5300-16	•	
Perform, document and report the tie to National Spatial Reference System (NSRS)	150/5300-16	•	
Survey runway end(s)/threshold(s)	150/5300-18	•[1]	
Monument runway end(s)/threshold(s)	150/5300-18	•[1]	
Document runway end(s)/threshold location(s)	150/5300-18	•[1]	
Identify and survey any displaced threshold(s)	150/5300-18	•[1]	
Monument displaced threshold(s)	150/5300-18	•[1]	
Document displaced threshold(s) location	150/5300-18	•[1]	
Determine or validate runway length	150/5300-18	•[1]	
Determine or validate runway width	150/5300-18	•[1]	
Determine runway profile using 50 foot stations	150/5300-18	•[1]	
Determine runway profile using 10 foot stations	150/5300-18	•[1]	
Determine the touchdown zone elevation (TDZE)	150/5300-18	N/A	
Determine and document the intersection point of all specially prepared hard surface (SPHS) runways	150/5300-18	N/A	
Determine and document the horizontal extents of any Stopways	150/5300-18	N/A	
Determine any Stopway profiles	150/5300-18	N/A	
Determine if the runway has an associated clearway	150/5300-18	N/A	
Survey clearway to determine objects penetrating the slope	150/5300-18	N/A	
Determine and document the taxiway intersection to threshold distance	150/5300-18	N/A	
Determine runway true azimuth	150/5300-18	N/A	
Determine or validate and document the position of navigational aids	150/5300-18	N/A	
Determine or validate and document the position of runway abeam points of navigational aids	150/5300-18	N/A	
Determine potential navigational aid screening objects	150/5300-18	N/A	
Collect and document VOR receiver checkpoint location and associated data	150/5300-18	N/A	

[1] Only when runway construction is involved.

Intended End Use of the Data ➢ Required Tasks ⮟	AC Reference	Construction	
		Airside	~~Landside~~
Perform or validate and document an airport airspace analysis	150/5300-18	•[1]	
Collect and document helicopter touchdown lift off area (TLOF)	150/5300-18	N/A	
Collect and document helicopter final approach and takeoff area (FATO)	150/5300-18	N/A	
Collect or validate and document airport planimetric data	150/5300-18	•	
Determine or validate the elevation of the Air Traffic Control Tower Cab Floor (if one is on the airport)	150/5300-18	N/A	
Perform or validate a topographic survey	150/5300-18	N/A	
Collect and document runway and taxiway lighting	150/5300-18	N/A	
Collect and document parking stand coordinates	150/5300-18	N/A	
Collect cultural and natural features of landmark value	150/5300-18	N/A	
Determine elevation of roadways at the intersecting point of the Runway Protection Zone (RPZ) or the runway centerline extended	150/5300-18	N/A	
Determine all Land Use to 65 DNL contour	150/5300-18	N/A	
Document features requiring digital photographs	150/5300-18	•	
Document features requiring sketches	150/5300-18	•	
Collect position and type of runway markings	150/5300-18	N/A	
Collect position and type taxiway markings	150/5300-18	N/A	
Locate, collect, and document photo ID points	150/5300-17	N/A	
Identify collect, and document wetlands or environmentally sensitive areas	150/5300-18	N/A	
Collect imagery	150/5300-17	N/A	
Provide a final Project Report	150/5300-16/18	•	•

[1] Only when runway construction is involved.

Detailed Engineering Fee Breakout

AIRPORT: Wendover Airport
LOCATION: Wendover, Utah

AIP PROJECT NUMBER: 3-49-0046-28
DATE: December 9, 2014

PROJECT DESCRIPTION: Rehabilitate Taxiway A1

		Proposed Fee	Independent Fee Analysis	Negotiated Fee
	PART A - BASIC SERVICES			
1.0	Preliminary Design Phase	$ 4,976.50		
2.0	Design Phase	$ 56,836.00		
3.0	Bidding Phase	$ 10,133.50		
SUB-TOTAL PART A BASIC SERVICES		$ 71,946.00		
	PART B - SPECIAL SERVICES			
4.0	Construction Administration Phase	$ 4,403.00		
5.0	Pre-Construction Coordination Phase	$ 5,820.50		
6.0	Construction Coordination (Based on 30 Days)	$ 69,396.50		
7.0	Post Construction Phase	$ 4,260.00		
SUB-TOTAL PART B SPECIAL SERVICES		$ 83,880.00		
	SPECIAL CONSIDERATIONS - SUB-CONSULTANTS			
SUB	Topographical Surveying (For Design)	$ 4,000.00		
SUB	Geotechnical/Pavement Investigation (For Design)	$ 14,255.00		
SUB	Acceptance Testing (For Construction)	$ 30,000.00		
SUB	AGIS Survey (For Design and As-Built)	$ 10,000.00		
SUB-TOTAL PART B BASIC SERVICES		$ 58,255.00		
TOTAL ENGINEERING FEES		$ 214,081.00	$ -	$ -

PART A - BASIC SERVICES

Item No.		Principal	Project Manager	Engineer / Planner	Associate Engineer	Electrical Engineer	Draftsman/ Surveyor	Clerical	Total Hours	Misc. Costs	Cost Summary
		$157.00	$130.00	$109.00	$92.00	$109.00	$75.00	$54.00			
1.0	**Preliminary Design Phase**										
1.1	Preliminary Meetings with the Sponsor and FAA		2	2	1	7			12		$1,333.00
1.2	Prepare Project Scope of Work and Contract	1	1	1	1			2	6		$596.00
1.3	Coordinate Topographical Surveying			1	1		1	2	5		$384.00
1.4	Coordinate Pavement Investigation / Geotechnical Testing			2				2	4		$326.00
1.5	Prepare Federal Grant Applications		1	4	2			6	13		$1,074.00
1.6	Update and Modify Exhibit "A" Property Map			1	1		3		5		$426.00
1.7	Prepare Environmental Checklist (not required for this project)										$0.00
	Estimated Total Man-hours	1	4	11	6	7	4	12	45		
	Summary Costs	$157.00	$520.00	$1,199.00	$552.00	$763.00	$300.00	$648.00		$0.00	
1.90	**Reimbursables**										$0.00
1.92	Miscellaneous								1 Days	$70.00	$70.00
1.93	Auto Rental		1						250 Mi	$0.55	$137.50
1.94	Mileage		250						1 Days	$130.00	$130.00
1.95	Lodging and Per Diem		1						1 Trips	$500.00	$500.00
1.96	Travel and Airline Costs		1						Total Preliminary Design Phase		$4,976.50

Checks

Item No.		Principal	Project Manager	Engineer / Planner	Associate Engineer	Electrical Engineer	Draftsman/ Surveyor	Clerical	Total Hours	Misc. Costs	Cost Summary
		$157.00	$130.00	$109.00	$92.00	$109.00	$75.00	$54.00			
2.0	**Design Phase**										
2.1	Prepare Preliminary Contract Documents	1	4	4	8	8		1	26		$2,775.00
2.2	Analyze Geotechnical Investigation Data		2	8	3		1		14		$1,483.00
2.3	Analyze Topographic Survey Data		4	8	16	4	3		35		$3,525.00
2.4	Inventory Existing Utilities		4	8	4		3		19		$1,985.00
2.5	Prepare Preliminary Plans	1	10	28	20	16	16	1	92		$9,347.00
2.6	Prepare Preliminary Technical Specifications	1	8	45	14	8		2	78		$8,370.00
2.7	Prepare Preliminary Special Provisions	1	5	24	30	4		2	66		$6,727.00
2.8	Prepare Drainage Analysis & Storm Drainage Design								0		$0.00
2.9	Compile/Submit Permits		1	4	1	2		1	9		$930.00
2.10	Calculate Estimated Quantities	1	2	8	8	8	1	1	29		$3,026.00
2.11	Prepare Estimate of Probable Construction Cost		2	15	3	4	1		25		$2,682.00
2.12	Prepare Design Engineer's Report and Mod. of Standards		4	10	16	4	1	1	36		$3,647.00
2.13	Plans Review at 90% Complete and Final	1	2	16	4	4	2	1	30		$3,169.00
2.14	In-House Quality Control		2	12	16	4	2		36		$3,626.00
2.15	Prepare and Submit Final Plans and Specifications	1	4	24	8	4	10	2	53		$5,323.00
2.16	Update Sign and Marking Plan				1		1	1	3		$221.00
	Estimated Total Man-hours	7	54	214	152	70	41	13	551		
	Summary Costs	$1,099.00	$7,020.00	$23,326.00	$13,984.00	$7,630.00	$3,075.00	$702.00		$0.00	
2.90	**Reimbursables**										$0.00
2.92	Miscellaneous								0 Days	$70.00	$0.00
2.93	Auto Rental								0 Mi	$0.55	$0.00
2.94	Mileage								0 Days	$130.00	$0.00
2.95	Lodging and Per Diem								0 Trips	$500.00	$0.00
2.96	Travel and Airline Costs								Total Design Phase		$56,836.00

Checks

PART A - BASIC SERVICES (CONT.)

Item No.		Principal	Project Manager	Engineer / Planner	Associate Engineer	Electrical Engineer	Draftsman/ Surveyor	Clerical	Total Hours	Misc. Costs	Cost Summary
		$157.00	$130.00	$109.00	$92.00	$109.00	$75.00	$54.00			
3.0	**Bidding Phase**										
3.1	Advertise for Bids		1		1			2	4		$330.00
3.2	Prepare/Conduct Pre-Bid Meeting		8		16				24		$2,512.00
3.3	Prepare Addenda		8		16	1		1	26		$2,675.00
3.4	Consult with Prospective Bidders		2		4	1			7		$737.00
3.5	Conduct Bid Opening		2		8				10		$996.00
3.6	Review Bid Proposals		2		4			2	8		$736.00
3.7	Prepare Recommendation of Award		4		8			1	13		$1,310.00
	Estimated Total Man-hours	**0**	**27**	**0**	**57**	**2**	**0**	**6**	**92**		
	Summary Costs	**$0.00**	**$3,510.00**	**$0.00**	**$5,244.00**	**$218.00**	**$0.00**	**$324.00**		**$0.00**	
3.90	**Reimbursables**										$0.00
3.92	Miscellaneous								1 Days	$70.00	$70.00
3.93	Auto Rental		1						250 Mi	$0.55	$137.50
3.94	Mileage		250						1 Days	$130.00	$130.00
3.95	Lodging and Per Diem		1						1 Trips	$500.00	$500.00
3.96	Travel and Airline Costs		1						Total Bidding Phase		$10,133.50
											Checks

TOTAL PART A - BASIC SERVICES $71,946.00

PART B - SPECIAL SERVICES

Item No.		Principal	Project Manager	Engineer / Planner	Associate Engineer	Electrical Engineer	Draftsman/ Surveyor	Clerical	Total Hours	Misc. Costs	Cost Summary
		$157.00	$130.00	$109.00	$92.00	$109.00	$75.00	$54.00			
4.0	**Construction Administration Phase**										
4.1	Prepare Construction Contract and Documents	1		1			2	1	5		$470.00
4.2	Office Assistance		1	8		1	1	1	12		$1,240.00
4.3	Request for Reimbursement		1	2				1	4		$402.00
4.4	Weekly/Monthly Reports		1						1		$130.00
4.5	Material Submittal Review		2	4		1		1	8		$859.00
4.6	Change Orders/Supplemental Agreements		1	2			1		4		$423.00
4.7	Record Drawings		1	1		1	1	1	5		$477.00
4.8	Final Construction Report		1	2				1	4		$402.00
	Estimated Total Man-hours	1	8	20	0	3	5	6	43		
	Summary Costs	$157.00	$1,040.00	$2,180.00	$0.00	$327.00	$375.00	$324.00		$0.00	
4.90	**Reimbursables**										$0.00
4.92	Miscellaneous								0 Days	$70.00	$0.00
4.93	Auto Rental								0 Mi	$0.55	$0.00
4.94	Mileage								0 Days	$130.00	$0.00
4.95	Lodging and Per Diem								0 Trips	$500.00	$0.00
4.96	Travel and Airline Costs								Total Construction Administration Phase		$4,403.00
											Checks

Item No.		Principal	Project Manager	Engineer / Planner	Associate Engineer	Electrical Engineer	Draftsman/ Surveyor	Clerical	Total Hours	Misc. Costs	Cost Summary
		$157.00	$130.00	$109.00	$92.00	$109.00	$75.00	$54.00			
5.0	**Pre-Construction Coordination Phase**										
5.1	Prepare Projects Files			1				3	4		$271.00
5.2	Prepare / Condut Pre-Construction Meeting		8	8					16		$1,912.00
5.3	Prepare / Submit Construction Management Plan		6	6	8				20		$2,170.00
	Estimated Total Man-hours	0	14	15	8	0	0	3	40		
	Summary Costs	$0.00	$1,820.00	$1,635.00	$736.00	$0.00	$0.00	$162.00		$0.00	
5.90	**Reimbursables**										$0.00
5.92	Miscellaneous								1 Days	$70.00	$70.00
5.93	Auto Rental		1						250 Mi	$0.55	$137.50
5.94	Mileage		250						2 Days	$130.00	$260.00
5.95	Lodging and Per Diem		1	1					2 Days	$500.00	$1,000.00
5.96	Travel and Airline Costs		1	1					Total Pre-Construction Coordination Phase		$5,820.50
											Checks

PART B - SPECIAL SERVICES (CONT.)

Item No.		Principal	Project Manager	Engineer/ Planner	Associate Engineer	Electrical Engineer	Draftsman/ Surveyor	Clerical	Total Hours	Misc. Costs	Cost Summary
6.0	**Construction Coordination (Based on 30 Days)**	$157.00	$130.00	$109.00	$92.00	$109.00	$75.00	$54.00			
6.1	Field Inspection/Coordination	1	2	3		1			7		$853.00
6.2	Resident Engineering		40	420		2	1		463		$51,273.00
6.3	Review Construction Submittals			3		2		1	6		$599.00
6.4	Review Contractor Payroll Forms				4				4		$368.00
6.5	Calculate Construction Quantities			8					8		$872.00
6.6	Periodic Cost Estimates			1					1		$109.00
6.7	Prepare Daily Reports			8					8		$872.00
6.8	Prepare/Submit Weekly Reports		4	2					6		$738.00
6.9	Review QC/QA Results provided by Contractor/Engineer		2	8					10		$1,132.00
6.10	Prepare Requests for Reimbursement		5	2					7		$868.00
	Estimated Total Man-hours	1	53	455	4	5	1	1	520		
	Summary Costs	$157.00	$6,890.00	$49,595.00	$368.00	$545.00	$75.00	$54.00		$0.00	
6.90	**Reimbursables**										$0.00
6.92	Miscellaneous								33 Days	$70.00	$2,310.00
6.93	Auto Rental		3	30					4750 Mi	$0.55	$2,612.50
6.94	Mileage		750	4000					33 Days	$130.00	$4,290.00
6.95	Lodging and Per Diem		3	30					5 Days	$500.00	$2,500.00
6.96	Travel and Airline Costs		3	2					Total Construction Coordination Phase		$69,396.50

Checks

Item No.		Principal	Project Manager	Engineer / Planner	Associate Engineer	Electrical Engineer	Draftsman/ Surveyor	Clerical	Total Hours	Misc. Costs	Cost Summary
7.0	**Post Construction Phase**	$157.00	$130.00	$109.00	$92.00	$109.00	$75.00	$54.00			
7.1	Conduct Final Inspection		1	3					4		$457.00
7.2	Coordinate Final Surveys		1						1		$130.00
7.3	Prepare Clean-up Item List								0		$0.00
7.4	Engineering Record Drawings		1	6		1	8		16		$1,493.00
7.5	Engineering Final Construction Report	1	1	8		1		2	13		$1,376.00
7.6	Summarize Project Costs		1	2				1	4		$402.00
7.7	Assist with Project Audit		1	1		1		1	4		$402.00
	Estimated Total Man-hours	1	6	20	0	3	8	4	42		
	Summary Costs	$157.00	$780.00	$2,180.00	$0.00	$327.00	$600.00	$216.00		$0.00	
7.90	**Reimbursables**										$0.00
7.92	Miscellaneous								0 Days	$70.00	$0.00
7.93	Auto Rental								0 Mi	$0.55	$0.00
7.94	Mileage								0 Days	$130.00	$0.00
7.95	Lodging and Per Diem								0 Days	$500.00	$0.00
7.96	Travel and Airline Costs								Total Post Construction Phase		$4,260.00

Checks

TOTAL PART B - SPECIAL SERVICES $83,880.00