

**ADAMS COUNTY
TASK ORDER ONE
Airport Engineering Services**

Date: July 18, 2017
Master Agreement #: RFQ 2016-303

Task Order #: 2017.343
Requisition #: Pending

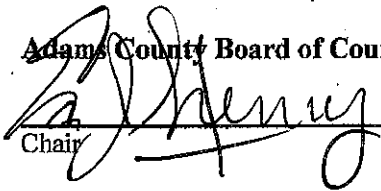
In accordance with the above mentioned Master Agreement between Adams County Colorado, and **JVIATION INC.**, dated November 22, 2016, the provisions of the Agreement and any Amendments thereto affected by this Task Order are modified as follows:

1. **Task Order Description.** Contractor shall perform the task listed in Contractor's Task Order Proposal dated March 23, 2017, which is incorporated by reference herein in accordance with the provisions of the Master Agreement #RFQ 2016.303.
2. **Cost.** The maximum amount payable by the County for performance of this Task Order is **\$119,350.00**. The total Agreement value including all previous Amendments, Task Orders, etc., is \$119,371.00.
3. **Performance Period.** Contractor shall complete its obligations under this Task Order on or before ~~March 29, 2018~~ **December 31, 2018**.
4. **Effective Date.** The effective date hereof is upon approval of the County or the Board of County Commissioners, whichever is later.

IN WITNESS WHEREOF, the County and the Contractor have caused their names to be affixed.

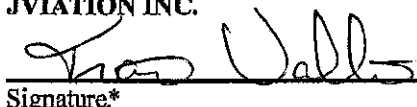
*Person's signing for Contractor hereby affirm that they are authorized to act on Contractor's behalf and acknowledge that the County is relying on their representations to the effect.

Adams County Board of County Commissioners


Chair


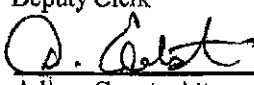
8/15/17
Date

**Contractor
JVIATION INC.**


Signature*
Travis Vallin
Printed Name

7-31-2017
Date
Principal
Title

Attest:
Stan Martin, Clerk and Recorder


Deputy Clerk

Adams County Attorney's Office

Approved as to Form:

Front Range Airport
www.ftg-airport.com
303-261-9103

5200 Front Range Parkway
Watkins, CO 80137



**RECORD OF NEGOTIATIONS
DESIGN, BIDDING AND CONSTRUCTION ENGINEERING SERVICES
FRONT RANGE AIRPORT TAXIWAY A7 REHABILITATION**

March 23, 2017

Ms. Linda Bruce
Federal Aviation Administration
Northwest Mountain Region
Denver Airports District Office
26805 E. 68th Avenue, Suite 224
Denver, CO 80249-6361

RE: AIP Project No. 3-08-0016-041-2017

- a. The consulting engineering and planning firm of Jviation was selected on November 22, 2016, from those consultants who submitted their qualifications. A scope of work for the Taxiway A7 Rehabilitation Engineering Services was prepared by the selected consultant.
- b. Discussions were held with the Airport Sponsor and the Consultant to ensure the consultant had a thorough understanding of the specific issues to be addressed in the scope of work.
- c. The Consultant submitted their fee proposal for the Taxiway A7 Rehabilitation Engineering Services for \$119,350.
- d. An independent fee estimate (IFE) for the Taxiway A7 Rehabilitation Engineering Services was prepared by the firm of Rood & Associates on February 27, 2017 (Attachment A).
- e. The Airport did a cost analysis comparing the detailed independent fee estimate with the consultant's fee proposal. The independent fee estimate was \$147,685 and Jviation's proposed fee is \$119,350. Jviation's fee is 19.19% lower than the IFE.
- f. The Consultant's proposed fee is significantly better than the independent fee estimate (IFE). According to FAA AC 5100-14E, Chapter 2, Para. 2.12, Section 2.13.3:

"When evaluating the reasonableness of a consultant's fee proposal, a general review standard used within the FAA and industry is whether the total fee proposal, as well as individual tasks within the proposal, is within 10% of the IFE."

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- g. The fee proposal submitted by Jviation is considered reasonable by the Sponsor. A contract will be prepared for the agreement between the sponsor and consultant. The sponsor's independent cost estimate, Fee Comparison, scope of work, consultant's fee proposal and detailed cost analysis are attached to this record of negotiation and hereby submitted to the FAA ADO for a reasonableness of cost determination. See attachments B-D.
- h. The negotiations were conducted in good faith to ensure the fees are fair and reasonable. The procedures outlined in AC 150/5100-14E have been followed.

Sincerely,

A handwritten signature in black ink, appearing to read "D. E. Ruppel". The signature is stylized with a large, looping flourish at the end.

D. E. Ruppel, Airport Director

Cc: Kevin Luey, FAA
File

Attachment A

ROOD & ASSOCIATES

Mr. David E. Ruppel
Airport Director
Front Range Airport
5200 Front Range
Watkins, CO 80137-7131

February 27, 2017

Subject: Front Range Airport (FTG)
Watkins, Colorado
AIP Project No. 3-08-0016-041
Taxiway A7 Rehabilitation
Design, Bidding and Construction Engineering Services
Independent Fee Estimate

Dear Mr. Ruppel:

In accordance with your email authorization to proceed on February 21, 2017, please find the attached independent fee estimate for the subject project. This estimate was prepared in conformity with provisions relating to formal consultant/sponsor negotiations described in Federal Aviation Administration Advisory Circular 150/5100-14E. The title on the provided spreadsheet has been revised to reflect "INDEPENDENT FEE ESTIMATE" to differentiate it from the engineer's proposal.

If you require additional supporting information, please feel free to contact me at any time.

Sincerely,



Neil E. Rood, P.E.
Aviation Consultant

INDEPENDENT FEE ESTIMATE

AIRPORT: Front Range Airport
 LOCATION: Watkins, Colorado

PROJECT NUMBER: AIP 3-08-0018-01
 DATE: February 27, 2017

PROJECT DESCRIPTION: Taxiway A7 Rehabilitation

	Independent Fee Analysis	Fee Proposal	Approved Fee			
1.0 Preliminary Design Phase	\$ 11,970.00	\$ -	\$ -			
2.0 Design Phase	\$ 55,128.00	\$ -	\$ -			
3.0 Bidding Phase	\$ 11,078.00	\$ -	\$ -			
SUB-TOTAL PART A BASIC SERVICES	\$ 78,176.00	\$ -	\$ -			
4.0 Construction Administration Phase	\$ 9,260.00	\$ -	\$ -			
5.0 Pre-Construction Coordination Phase	\$ 7,645.00	\$ -	\$ -			
6.0 Post-Construction Coordination Phase	\$ 5,080.00	\$ -	\$ -			
SUB-TOTAL PART B SPECIAL SERVICES (Lump Sum)	\$ 22,000.00	\$ -	\$ -			
	Direct Labor Cost	Overhead (% of Direct Labor Cost)	Total Labor Cost	Fixed Fee (% of Total Labor Cost)	Subtotal	Total Cost
7.0 On-Site Construction Coordination Phase ()	\$ 4,776.00	83.27544	\$ 13,608.73	27.174688	\$ 16,330.63	\$ 16,330.00
SUB 1 Topography Survey	\$ 10,000.00				\$ 10,000.00	\$ 10,000.00
SUB 2 Geotechnical Survey	\$ 7,000.00				\$ 7,000.00	\$ 7,000.00
SUB 3 Acceptance Testing	\$ 8,000.00				\$ 8,000.00	\$ 8,000.00
SUB-TOTAL PART B SPECIAL SERVICES (Cost Plus Fixed Fee)	\$ 29,776.00	\$ 8,832.73	\$ 13,608.73	\$ 2,721.75	\$ 41,939.48	\$ 41,939.00

PART A - BASIC SERVICES

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD/Teck I	Project Coordinator	Support	Total Hours	Cost	Summary
1.0 Preliminary Design Phase	233.00	220.00	111.00	118.00	85.00	83.00	85.00	12	\$	10,820.00
1.1 Meeting with the Sponsor and PIA		6	6					16	\$	3,170.00
1.2 Prepare Project Scope of Work and Contract	1	4	8		1		2	16	\$	3,180.00
1.3 Project Coordination	4	8					4	16	\$	3,180.00
1.4 Coordinate Topographical Survey	1		11				1	14	\$	1,820.00
1.5 Coordinate Geotechnical Investigation	1		8				1	10	\$	1,340.00
1.6 Prepare Environmental Checklist (CATEX)	2		8				2	13	\$	1,650.00
1.7 Prepare Project Close Application	1		8				2	13	\$	1,790.00
Estimated Total Man-hours	8	22	29	6	1	4	2	98	\$	13,970.00
Summary Costs	\$1,773.60	\$4,698.00	\$4,299.20	\$2,91	\$85.00	\$36.00	\$36.00			\$13,970.00

PART A - BASIC SERVICES (CONT.)

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost	Summary
2.0	Design Phase	\$28,500	\$20,000	\$18,500	\$6,000	\$25,000	\$65,000			
2.1	Analyze Topographic Survey Data		1	18				19	\$	\$150.00
2.2	Analyze Geotechnical Investigation Data		1	3		4		11	\$	1,200.00
2.3	Prepare Preliminary Design		2	3				10	\$	1,400.00
2.4	Inventory Existing Utilities			8	4			12	\$	1,600.00
2.5	Prepare Preliminary Contract Documents		1	4			4	9	\$	1,000.00
2.6	Complete Utility and Planning Plan (CUPP)		2	8	4			22	\$	2,700.00
2.7	Prepare Preliminary Plans		4	32	16	24		100	\$	12,100.00
2.8	Prepare Preliminary Technical Specifications		1	16	12		8	37	\$	4,900.00
2.9	Prepare Preliminary Special Provisions		1	8				13	\$	1,600.00
2.10	Compile/Revised R.A. Form 1620		1	8				9	\$	1,100.00
2.11	Calculate Estimated Quantities		1	8				9	\$	1,100.00
2.12	Prepare Estimate of Probable Construction Cost		2	8	4			20	\$	2,500.00
2.13	Prepare Design Engineer's Report and Modification of Standards		2	16	8		8	34	\$	4,100.00
2.14	Plan Review at 90% Complete		1	4	4			13	\$	1,575.00
2.15	In House Quality Control		1	8				9	\$	1,100.00
2.16	Prepare and Submit Final Plans and Specifications		1	4	16	24		45	\$	5,500.00
	Estimated Total Man-Hours	5	34	176	72	34	8	442	\$	53,225.00
	Summary Cost	\$785.00	\$6,820.00	\$23,760.00	\$10,004.00	\$11,968.00	\$8.00		\$1,872.00	

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost	Summary
3.0	Bidding Phase	\$28,500	\$20,000	\$12,500	\$15,000	\$4,000	\$9,000			
3.1	Bid Anticipation		1	4				5	\$	1,800.00
3.2	Prepare Contract Pre-Bid Meeting		4	2			1	10	\$	1,200.00
3.3	Prepare Abstracts		2	2	8		2	28	\$	3,400.00
3.4	Conduct with Prospective Bidders		4	8				12	\$	1,800.00
3.5	Attend Bid Opening		2					2	\$	800.00
3.6	Review Bid Proposals		2	8			2	12	\$	1,500.00
3.7	Prepare Recommendations of Award		1	4	8		1	14	\$	1,600.00
	Estimated Total Man-Hours	8	17	34	8	2	7	88	\$	10,700.00
	Summary Cost	\$8.00	\$1,082.00	\$4,820.00	\$1,200.00	\$800.00	\$340.00			

PART B - SPECIAL SERVICES

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost	Summary
4.0	Construction Administration Phase	\$28,500	\$20,000	\$18,500	\$15,000	\$4,000	\$9,000			
4.1	Prepare Construction Contract and Documents		1	8				9	\$	1,100.00
4.2	Office Assistance		1	8				9	\$	1,100.00
4.3	Report for Re-insurement		1				4	5	\$	500.00
4.4	Weekly/Monthly Reports		2					2	\$	400.00
4.5	Material Submittal Review		1	8				9	\$	1,100.00
4.6	Change Orders/Shop/Installed Agreements		1	2			4	7	\$	800.00
	Estimated Total Man-Hours	3	12	24	0	0	8	27	\$	3,200.00
	Summary Cost	\$750.00	\$3,000.00	\$3,250.00	\$0.00	\$0.00	\$1,360.00			

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost	Summary
5.0	Pre-Construction Construction Phase	\$28,500	\$20,000	\$18,500	\$15,000	\$4,000	\$9,000			
5.1	Prepare Project File		1					1	\$	100.00
5.2	Prepare / Conduct Pre-Construction Meeting		4	4				8	\$	1,100.00
5.3	Prepare / Submit Construction Management Plan		1	8	4		4	17	\$	2,100.00
5.4	Review Contractor's Safety Plan Compliance Documents		4	8	4		2	18	\$	2,200.00
	Estimated Total Man-Hours	6	20	26	4	6	6	66	\$	7,600.00
	Summary Cost	\$50.00	\$1,600.00	\$1,750.00	\$1,500.00	\$800.00	\$800.00			

PART B - SPECIAL SERVICES (CONT.)

Item No.	Principal	Project Manager II	Assistant Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost	Summary
6.0 Post Construction Coordination Phase	\$23,500	\$80,000	\$33,500	\$150,000	\$65,000	\$83,000	\$83,000			
6.1 Conduct Final Inspection		4	4					8	\$	13,400.00
6.2 Conduct Final Survey			4					4	\$	940.00
6.3 Prepare Final Utility Report			8				2	10	\$	1,250.00
6.4 Prepare Engineering Record Drawings					1			1	\$	680.00
6.5 Prepare Final Construction Report	1	2	12				8	24	\$	3,000.00
6.6 Summarize Project Costs		1	1				2	4	\$	1,400.00
6.7 Assist with Project Audit			4					4	\$	800.00
Estimated Total Man-hours	1	4	30	0	1	0	12	49	\$	9,884.00
Summary Costs	\$23,500	\$80,000	\$4,840.00	\$0.00	\$78,000	\$0.00	\$1,200.00			

Item No.	Principal	Project Manager/Asst	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost	Summary
7.0 On-Site Construction Coordination Phase 1	\$8,500	\$17,000	\$40,000	\$15,000	\$11,000	\$28,000	\$19,000			
7.1 Field Inspection/Coordination		5						5	\$	450.00
7.2 Resident Engineering			72					72	\$	2,600.00
7.3 Review Construction Submittals			8				1	9	\$	320.00
7.4 Review Construction Payment Plans			2				2	4	\$	80.00
7.5 Calculate Construction Quantities			4				2	6	\$	150.00
7.6 Produce Cost Estimates			4				4	8	\$	150.00
7.7 Prepare Daily Reports			9				9	18	\$	360.00
7.8 Prepare/Submit Weekly Reports			2				2	4	\$	80.00
7.9 Review QC/QA Results provided by Contractor			7				7	14	\$	280.00
Estimated Total Man-hours	0	5	88	0	0	0	0	116	\$	4,714.00
Summary Costs	\$0.00	\$48,000	\$4,300.00	\$0.00	\$11,000	\$0.00	\$19,000			

Item No.	Cost	Summary
SUB 1		
Topography Survey	\$	800.00

Item No.	Cost	Summary
SUB 2		
Controlled Survey	\$	4,500.00

Item No.	Cost	Summary
SUB 3		
Accession Timing	\$	5,000.00

AIRPORT: Front Range Airport
 LOCATION: Watkins, Colorado

Attachment B
 Fee Comparison

PROJECT NUMBER: AIP 5-08-016-941
 DATE: January 11, 2017

PROJECT DESCRIPTION: Taxiway A7 Rehabilitation

	Total Cost	Independent Fee Analysis	Negotiated Fee
1.0 Preliminary Design Phase	\$ 11,040.00	\$ 13,970.00	\$ -
2.0 Design Phase	\$ 33,910.00	\$ 35,325.00	\$ -
3.0 Bidding Phase	\$ 5,620.00	\$ 11,075.00	\$ -
SUB-TOTAL PART A BASIC SERVICES	\$ 50,570.00	\$ 60,370.00	\$ -
4.0 Construction Administration Phase	\$ 5,970.00	\$ 9,260.00	\$ -
5.0 Pre-Construction Coordination Phase	\$ 4,495.00	\$ 7,645.00	\$ -
6.0 Post-Construction Coordination Phase	\$ 12,355.00	\$ 9,080.00	\$ -
SUB-TOTAL PART B SPECIAL SERVICES (Lump Sum)	\$ 22,820.00	\$ 25,985.00	\$ -
	Overhead (% of Direct Labor Cost)	Fixed Fee (% of Total Labor Cost)	Subtotal
7.0 On-Site Construction Coordination Phase (9 Calendar Days)	\$ 4,960.00	9173.02%	14,133.02
SUB 1 Topography Survey	\$ 10,000.00		\$ 10,000.00
SUB 2 Geotechnical Survey	\$ 7,000.00		\$ 7,000.00
SUB 3 Acceptance Testing	\$ 8,000.00		\$ 8,000.00
SUB-TOTAL PART B SPECIAL SERVICES (Cost Plus Fixed Fee)	\$ 29,960.00	\$ 9,173.02	\$ 14,133.02
			\$ 2,826.60
			\$ 41,959.63
			\$ 41,960.00
			\$ 41,330.00

PART A - BASIC SERVICES

Item No.	Principal	Project Manager/II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost Summary
1.0 Preliminary Design Phase	333.00	120.00	634.00	1120.00	125.00	125.00	125.00	9	1,600.00
1.1 Meetings with the Agency and FAA								3	1,500.00
1.2 Prepare Project Scope of Work and Contract	3	2						5	1,500.00
1.3 Pre-Construction								4	1,000.00
1.4 Coordinate Topographical Survey								1	200.00
1.5 Coordinate Geotechnical Investigation								1	200.00
1.6 Prepare Environmental Check-Airway			20					20	1,000.00
1.7 Prepare Federal Grant Application		2						2	100.00
Estimated Total Man-Hours	3	35	29	0	0	0	7	69	11,648.00
Summary Class	233.00	170.00	674.00	88.00	10.00	125.00	125.00	69	11,648.00

PART A - BASIC SERVICES (CONT.)

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost Summary
2.0 Design Phase	\$23,800	\$200,00	\$135,00						
2.1 Analyze Topographic Survey Data				4	85.00	88.00	85.00	4	\$ 600.00
2.2 Analyze Geotechnical Investigation Data		2	2					4	\$ 675.00
2.3 Prepare Preliminary Design			8					8	\$ 1,080.00
2.4 Temporary Bridge Utilities					2			2	\$ 170.00
2.5 Prepare Preliminary Contract Documents		4	8					12	\$ 1,800.00
2.6 Commence Safety and Planning Plan (SPP)		4	8	24	44			80	\$ 1,800.00
2.7 Prepare Preliminary Plans		4	8					12	\$ 1,620.00
2.8 Prepare Preliminary Technical Specifications		4	16					20	\$ 2,500.00
2.9 Prepare Preliminary Special Provisions			2					2	\$ 250.00
2.10 Complete/Submit FAA Form 7460						2		2	\$ 170.00
2.11 Calculate Estimated Quantities				4				4	\$ 500.00
2.12 Prepare Estimate of Probable Construction Cost		2	4					6	\$ 750.00
2.13 Prepare Design Engineer's Report and Identification of Structures		4	20	14				40	\$ 5,000.00
2.14 Final Review at VOT's Corralville		6			4		6	16	\$ 2,000.00
2.15 In-House Quality Control		4						4	\$ 500.00
2.16 Prepare and Submit Final Plans and Specifications		4	8		16		8	36	\$ 4,500.00
Estimated Total Man-Hours	0	62	64	48	44	2	24	244	\$ 3,945.00
Summary Costs	\$0.00	\$9,488.00	\$1,548.00	\$7,500.00	\$4,010.00	\$170.00	\$1,000.00		

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost Summary
3.0 Bidding Phase	\$25,500	\$20,000	\$135,00	\$150,00	\$85,00	\$85,00	\$85,00		
3.1 Bid Advertising		4				4		8	\$ 1,020.00
3.2 Prepare/Conduct Pre-Bid Meeting		4						4	\$ 500.00
3.3 Prepare Abstract		3	4					7	\$ 875.00
3.4 Confer with Prospective Bidders			4					4	\$ 500.00
3.5 Attend Bid Opening		4						4	\$ 500.00
3.6 Review Bid Proposals		3						3	\$ 375.00
3.7 Prepare Recommendation of Award		4						4	\$ 500.00
Estimated Total Man-Hours	0	21	8	0	8	4	0	33	\$ 4,270.00
Summary Costs	\$0.00	\$4,200.00	\$1,000.00	\$1.00	\$0.00	\$340.00	\$0.00		

PART B - SPECIAL SERVICES

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost Summary
4.0 Construction Administration Phase	\$21,500	\$200,00	\$135,00	\$150,00	\$85,00	\$85,00	\$85,00		
4.1 Prepare Construction Contract and Documents		4		4	4	8		20	\$ 2,400.00
4.2 Office Administration		4		5	4	8	8	31	\$ 3,825.00
4.3 Inspect for Conformances		6					4	10	\$ 1,250.00
4.4 Weekly/Monthly Reports		4						4	\$ 500.00
4.5 Monthly Schedule Review			8					8	\$ 1,000.00
4.6 Change Orders/Supplemental Agreements		2	4		4			10	\$ 1,250.00
Estimated Total Man-Hours	0	18	20	9	12	16	12	77	\$ 9,725.00
Summary Costs	\$0.00	\$1,640.00	\$4,450.00	\$1,575.00	\$1,220.00	\$1,300.00	\$1,000.00		

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost Summary
5.0 Pre-Construction Coordination Phase	\$25,500	\$200,00	\$135,00	\$150,00	\$85,00	\$85,00	\$85,00		
5.1 Prepare Project File		3	4					7	\$ 875.00
5.2 Prepare / Conduct Pre-Construction Meeting		3	4					7	\$ 875.00
5.3 Prepare / Submit Construction Management Plan		3	4					7	\$ 875.00
5.4 Review Contractor's Safety File Compliance Document		4						4	\$ 500.00
Estimated Total Man-Hours	0	6	20	0	0	0	0	21	\$ 2,625.00
Summary Costs	\$0.00	\$1,200.00	\$1,700.00	\$0.00	\$0.00	\$0.00	\$0.00		

PART B - SPECIAL SERVICES (CONT.)

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost Summary
60 Final Construction Coordination Plans	\$21.00								
61 Conduct Final Inspection		4	4					8	1,140.00
62 Coordinate Final Survey			2					2	270.00
63 Prepare Final Rating Report			4					4	510.00
64 Prepare Engineering Approval Drawings		4	4		12			20	2,700.00
65 Prepare Final Construction Report			31					31	4,284.00
66 Determine Project Close			4					4	500.00
67 Assist with Project Audit			2					2	450.00
Estimated Total Man-hours	0	10	31	0	12	0	0	53	
Summary Costs	\$21.00	\$1,640.00	\$1,530.00	\$0.00	\$1,530.00	\$18.00	\$0.00	53	\$2,589.00

Item No.	Principal	Project Manager I/II	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost Summary
70 On-Site Construction Coordination Phase (1 Calendar Day)	\$85.00	\$17.00					\$18.00		
71 Hold Inspection/Coordination		\$4.00			\$23.00	\$23.00		5	\$28.00
72 Resident Engineering			72					72	3,080.00
73 Review Construction Submittals			8					8	320.00
74 Review Contractor Payment Requests						8		8	194.00
75 Calculate Cost Invoiced Quantities			4					4	160.00
76 Prepare Cost Estimates			4					4	160.00
77 Prepare Weekly Reports			8					8	320.00
78 Prepare/Submit Weekly Reports		2	2					4	194.00
79 Review QC/QA Records provided by Contractor			4					4	160.00
Estimated Total Man-hours	0	0	80	0	0	8	0	124	
Summary Costs	\$85.00	\$44.00	\$4,160.00	\$0.00	\$0.00	\$184.00	\$0.00	124	\$4,969.00

Item No.	Principal	Project Manager I/II	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost Summary
80B 1 SUB 1 Temporary Survey								1	\$100.00

Item No.	Principal	Project Manager I/II	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost Summary
80B 2 SUB 2 Contracted Survey								1	\$370.00

Item No.	Principal	Project Manager I/II	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost Summary
80B 3 SUB 3 Acceptance Testing								1	\$100.00

Attachment C

**SCOPE OF WORK
FOR
FRONT RANGE AIRPORT
Watkins, CO.
AIP Project No. 3-08-0016-041
Taxiway A7 Rehabilitation**

This is an Appendix attached to, made a part of and incorporated by reference with the Consulting Contract dated November 22, 2016 between Adams County Board of County Commissioners and Jviation, Inc. providing for professional services. For the remainder of this scope Front Range Airport and/or Adams County Board of Commissioners is indicated as "Sponsor" and Jviation, Inc. is indicated as "Engineer". The estimated construction cost of this project is approximately \$375,000.

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 Construction Coordination, and Post Construction Coordination Phases for the project to Taxiway A7 Rehabilitation. This scope of work is for the design services and construction services provided by the Engineer for the Sponsor. See Exhibit No. 1 below for the project location.

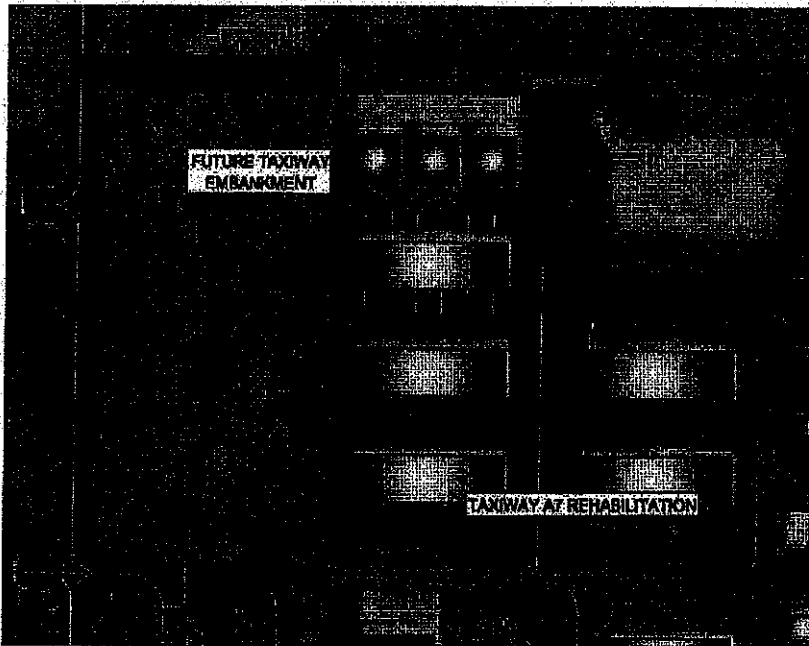


EXHIBIT NO. 1

DESCRIPTION

The existing surface of Taxiway A7 south of the Terminal Ramp consists of heavily work asphalt pavement with signs of severe cracking. The taxiway pavement has experienced extensive pavement fatigue, as evidenced by the deteriorating asphalt surface that is in need of resurfacing. According to the CDOT Aeronautics 2015 Pavement Evaluations & Management, the last major rehabilitation occurred in June of 1993. The CDOT Aeronautics gives this taxiway a PCI of 29 which classifies as a pavement recommended for reconstruction.

Based on past taxiway rehabilitation projects with similar pavement conditions and funding constraints, this project will mill and overlay the pavement. It is anticipated this project will mill the top two inches of asphalt surface course, clean and seal all cracks, and pave two inches of new pavement over the milled surface. Determination of compliance with standard grades will be made by a review of the topographical survey of the taxiway surface.

Also included with this project, the future taxiway east of the hangars will be embanked using onsite borrow material per FAA specifications. Once embankment is complete, millings will be placed using existing onsite milling to complete a temporary bypass taxiway that will be used during the rehabilitation of Taxiway A7.

A pavement/geotechnical investigation will be conducted on the existing taxiway to determine existing pavement thickness and the characteristics of the existing pavement and underlying soil. The pavement design will address the critical aircraft loading.

A Topographical survey will be conducted on the taxiway to verify the existing pavement elevations and infrastructure located within the project area.

The Engineering fees for the Taxiway A7 Rehabilitation project will be broken into two parts, **Part A-Basic Services**; 1) Preliminary Design Phase, 2) Design Phase, 3) Bidding Phase and EX) Reimbursable Costs during Design and **Part B-Special Services**; 4) Construction Administration Phase, 5) Pre-Construction Phase, 6) Construction Coordination Phase, or Field Engineering, 7) Post Construction Phase and EX) Reimbursable Costs during Construction. Additional design services that will be completed by sub-consultants to the Engineer including the proposed geotechnical investigation and topographical survey, will be included in **Part B-Special Services**. Quality Assurance (QA) testing verification during the construction phase of the project will also be included under **Part B-Special Services**. Parts A and B and the seven phases are described in more detail below.

PART A - BASIC SERVICES

Part A - Basic Services will consist of the preliminary design phase, design phase, and bidding phase. Part A will be based on a Lump Sum Fee structure.

1.0 Preliminary Design Phase

1.1 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 3 meetings with the Sponsor and/or the FAA throughout the course of the project.

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 Project Coordination. The Engineer shall provide project management and coordination services to ensure the completion of the design. These duties shall include items such as:

- ➔ The Engineer will prepare a project budget determining appropriate staffing to complete the design.

- The Engineer will analyze the budget to ensure budget and staffing are on track to meet design schedules within budget.
- Providing project instructions to staff to complete the design.
- The Engineer and administrative staff will complete monthly billing.

The Engineer shall conduct the following tasks:

- Provide the Sponsor with a monthly Project Status Report (PSR), in writing, reporting on Engineer's progress and any problems in performing the work of which the Engineer becomes aware. The PSR shall include an update of the project schedule as described in this section, when schedule changes are expected.
- The Engineer shall create and maintain a Quality Control Checklist (QCC) for the project. The QCC shall include personnel, project milestone checking and peer review procedures at each phase of the project.

1.4 Coordinate Topographical Survey. This task includes preparing the requirements, limits of work, scheduling and supervising of the topographical survey. Negotiating with the surveying firm for a cost to perform the work is also included in this item. During design, the need may arise to verify other existing survey information or to extend the limits of the existing survey.

1.5 Coordinate Geotechnical Investigation. This task includes preparing the requirements for soils testing, limits of work, and scheduling a time for testing to be completed. Negotiating with the geotechnical engineering firm for a cost to perform the work is also included in this item. During design, the need may arise to perform additional soils testing and to extend the limits of the geotechnical investigation.

1.6 Prepare Environmental Checklist (CATEX). An environmental checklist for the Taxiway A7 Rehabilitation project will be completed for this project. The checklist addresses how the project affects the environmental aspects as defined under federal guidelines for environmental assessments.

1.7 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
- Environmental Checklist
- Prepare the Sponsors Certifications
- Attach the current Grant Assurances
- Include DOT Title VI Assurances
- Include Certification for Contract, Grants, and Cooperative Agreements
- Include Title VI Pre-Award Checklist

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.

A. Project checklist, agenda, meeting minutes from Pre-Design Meeting	✓	✓
B. Scope of Work and blank man-hour spreadsheet to use for IFE		✓
C. Design Schedule	✓	✓
D. Monthly PSR		✓
E. Meeting minutes from coordination meetings	✓	✓
F. Federal Grant Application	✓	✓
G. Environmental Checklist	✓	✓

2.0 Design Phase

2.1 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 AutoDesk Civil 3D in order to sort data into the Engineer's standard layers for efficient analysis.
- ➔ Verify surveyor horizontal and vertical control
- ➔ Verify survey data from as-built conditions.
- ➔ Sort all data points by layers and descriptions 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.

2.2 Analyze Geotechnical Investigation Data. This task includes analyzing the geotechnical investigation, consisting of the following:

- ➔ Review geotechnical engineer recommendations.
- ➔ Determine appropriate data for the pavement design form(s).
- ➔ Input data for computer modeling with topographical survey data.
- ➔ Prepare soil information for incorporation on the construction drawings.

2.3 Prepare Pavement Design. After receiving the geotechnical investigation data, the Engineer will analyze the data, and prepare a pavement section using current FAA design software. The Engineer will submit the pavement design form 5100-1 with a narrative to the FAA.

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 Contract Documents. This task will include preparing the preliminary Contract Documents including Contract Proposal, Bid Bond, Contractor Information Sheet, Subcontractor/Material Supplier List, Disadvantaged Business Utilization Commitment, DBE Participation Form, Certification of Non-Segregated Facilities, Equal Employment Opportunity Report Statement, Buy America Certification, Buy America Waiver Request, Buy America Conformance Listing, Certification Statement Regarding Undocumented Individuals, Bid Proposal, Contract, Payment Bond, Performance Bond, Notice of Award, Notice to Proceed, Notice of Contractor's Settlement, General Provisions, Operational Safety on Airports

During Construction Advisory Circular, and Wage Rates. The wage rates will be updated at the time of advertisement to reflect the most current wage rates for the project. Preparation will include establishing the location for the bid opening, dates for advertisement, and description of the work schedule. Also, included in the Preliminary Contract Documents and covered in separate tasks below are the Construction Safety and Phasing Plan (CSPP), Technical Specifications, and Special Provisions. Preliminary Contract Documents will be prepared as early as possible during the design phase and submitted to the Sponsor for review.

2.6 Construction Safety and Phasing Plan (CSPP). This task involves meeting with the Sponsor to discuss the operations of the airport to help determine how the construction phasing of the project will effect these operations. From these meetings, a complete Construction Safety and Phasing Plan (CSPP) will be developed to ensure safety compliance when coordinating construction activities and airport operations. The CSPP will be developed in accordance with the requirements of FAA Advisory Circular (AC) 150/5370-2F "Operational Safety on Airports during Construction." A construction phasing plan that meets the requirements of the AC and operational needs of the airport will be developed as part of the CSPP and included in the contract documents for bidding. The CSPP will thoroughly discuss the operations of the airport and safety requirements during the project. This plan will also identify any nighttime work, continuous working times, or other unusual conditions that could affect the contractor's normal progress on the project. The CSPP will be submitted at 30% complete for review and at 95% complete for coordination.

2.7 Prepare Preliminary Plans. The following is a list of anticipated construction drawings for the project. 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 Approximate Quantities, and General Notes (1 Sheet) – Lists all the drawings in the plan set, approximate quantities, general notes and legends where applicable.
- ➔ Survey Control Plan (1 Sheet) – Depicts survey control for the project.
- ➔ Safety Plan (1 Sheet) – Identifies the safety procedures for the project.
- ➔ Geotechnical Investigation Plan (1 Sheet) – Identifies geotechnical data relevant to the project.
- ➔ Construction Phasing/Operations Plan (3 Sheets) – Identifies to the contractor the phasing requirements and operating procedures for the project.
- ➔ Demolition Plan (1 Sheet) – Depicts the demolition limits for the project.
- ➔ Geometric Layout (2 Sheets) – Depicts the geometry for the project.
- ➔ Grading Sheet (1 Sheet) – Depicts the grading for the future taxiway.
- ➔ Spot Elevation Plans (1 Sheet) – Depicts the spot elevations of the project area.
- ➔ Taxiway Plan and Profiles (2 Sheet) – Depicts the plan and profile of the taxiway.
- ➔ Typical Sections (2 Sheet) – Depicts the typical sections for the grading.
- ➔ Pavement Markings and Detail Sheets (1 Sheet) – Depicts the locations and markings for the project.
- ➔ Drainage Plan and Profile Sheets (1 Sheet) – Depicts the profiles of proposed storm lines.
- ➔ Drainage Details (1 Sheet) – Depicts the details for any drainage elements including the structurally designed storm manholes and inlets.
- ➔ Seeding and Erosion Control Plan (2 Sheet) – Depicts the layout of various seeding and erosion control measures.
- ➔ Seeding and Erosion Control Details (2 Sheets) – Depicts the details for all seeding and erosion control measures.

PLAN SET TOTALING 24 SHEETS

2.8 Prepare Preliminary Technical Specifications. This task includes assembling the technical specifications necessary for the intended work. Standard FAA specifications will be utilized where possible; with the guidance from the current edition of the *FAA Advisory Circular 150/5370-10G, Standards for Specifying*

Construction of Airports and any 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 standard FAA specifications. The standard specifications to be utilized will include, but not be limited to, the following:

- Item P-151 Clearing and Grubbing
- Item P-152 Excavation and Embankment
- Item P-156 Temporary Air and Water Pollution, Soil Erosion and Siltation Control
- Item P-401 Plant Mix Bituminous Pavements
- Item P-603 Bituminous Tack Coat
- Item P-620 Runway and Taxiway Painting
- Item D-701 Pipe and Storm Drains and Culverts
- Item D-751 Manholes, Catch Basins, Inlets, and Inspection Holes
- Item T-901 Seeding and Erosion Control

The added 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 P-313 Structural Geogrid

2.9 Prepare Preliminary Special Provisions. This task will include preparing the preliminary Special Provisions to address, or expound on, conditions that require additional clarification. They will include, but are not be limited to the Haul Roads, Airport Security, Radio Communications, Work Schedule, Contractor's Quality Control Program, Sequence of the Work, Closure of Air Operations Areas, Accident Prevention, Underground Cables, Utilities, Insurance, Indemnification, Sales and Use Taxes, Permits and Compliance with Laws, Executed Contracts, Subletting or Assigning of Contracts, Qualification of Disadvantaged Business Enterprises, Liquidated Damages, Acceptance Testing, Grade Control and Surface Tolerance, Construction Management Plan, Instruction Manuals.

2.10 Compile/Submit FAA Form 7460. This task includes preparing and submitting the required FAA Form 7460 on the Sponsor's behalf. Also included is the preparation and submittal of the required Form 7460 on the Sponsor's behalf for the temporary equipment and/or batch plant.

2.11 Calculate Estimated Quantities. This task includes calculating all necessary quantities for the various work items. Quantities will be consistent with the specifications and acceptable quantity calculation practices.

2.12 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.

2.13 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 a detailed summary of the project, photographs and descriptions of existing site conditions, pavement life cycle cost analysis, recycling and material availability analysis, estimate of project costs, and a schedule for the completion of the design, bidding and construction. 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.

2.14 Plans Review at 90% Complete. The Engineer will submit a set of Construction Drawings, Specifications and Contract Documents to the Sponsor for their review. A Meeting will be scheduled for 90% plans-in-hand review. The project will be reviewed with the FAA to obtain their concurrence with the design.

2.15 In-House Quality Control. The Engineer has an established quality control program that will provide both experienced and thorough reviews of all project submittals, and will also provide engineering guidance to the design team throughout design development from an experienced senior-level Professional Engineer.

Prior to each review set of Construction Drawings, Specifications and Contract Documents being submitted to the Sponsor and FAA, 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 Professional 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.

In addition to the 90% review of all plans, specifications, and engineer's reports, the Engineer in-house quality control program also provides engineering guidance to the design team throughout the project design in attempt to steer the project in a manner that provides the best sound engineering judgment.

2.16 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 Sponsor, CDOT Aeronautics, and FAA. These documents shall incorporate all revisions, modifications and corrections determined during the Sponsor, CDOT Aeronautics, and FAA final review.

RESPONSE DATES		
A. Pavement design form 5100-1 with a narrative.	✓	✓
B. 90 % Contract Docs, Special Provisions, Specifications, Estimate, Plans, Engineers Report, and CSPP	✓	✓
C. FAA Form 7460	✓	✓
D. Final Contract Docs, Special Provisions, Specifications, Estimate, Plans, Engineers Report, and CSPP for Bidding	✓	✓

3.0 Bidding Phase

3.1 Bid Assistance. The Engineer shall assist the Sponsor, as needed, with any required bidding documents.

3.2 Prepare/Conduct Pre-Bid Meeting. The Engineer will conduct the pre-bid meeting and pre-bid site visit in concert with the Sponsor's requirements.

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 Sponsor and issued. The addenda will meet all design and construction standards, as required.

3.4 Consult with Prospective Bidders. During the bidding process, the Engineer will be available, if needed, to clarify bidding issues with contractors and suppliers, and for consultation with the various entities associated with the project.

3.5 Attend Bid Opening. The Engineer will attend the bid opening for the project, which will be run by the Sponsor.

3.6 Review Bid Proposals. Upon the opening of submitted bid proposals by the Sponsor, the Engineer will review all the bid proposals submitted. An analysis of the bid prices and contractor's qualification for the work will be completed and tabulated.

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. The Engineer, upon recommendation of a qualified bidder, shall also investigate for compliance with the Suspension and Debarment rules on the <https://www.epls.gov/epls/search.do> website.

TASK DELIVERABLES		
	Complete	Not
A. Pre-Bid Meeting Agenda	✓	✓
B. Addenda	✓	✓
C. Recommendation of Award		✓

EX Reimbursable Costs during Design

This section includes reimbursable items such as auto rental, mileage, lodging and per diem, travel and other miscellaneous costs incurred in order to complete Part A – Basic Services.

PART B - SPECIAL SERVICES

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. Part B will be based on a Cost Plus Fixed Fee structure. Also included are direct subcontract costs, such as topographical survey, geotechnical investigation, and quality assurance testing verification during construction.

4.0 Construction Administration Phase

4.1 Prepare Construction Contract and Documents. This item accounts for the efforts during and immediately prior to 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 Construction Manager/Field 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. A request for reimbursement will be submitted with all supporting documentation (administrative costs, engineering, construction periodic estimates, any miscellaneous costs) to the Sponsor for review and approval prior to the Sponsor requesting reimbursement from the appropriate agency. The Sponsor does participate in the FAA's electronic transfer of funds program; however, these forms are completed to ensure that the proper amount of funding is being requested.

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 Construction Manager/Field Engineer(s) or office personnel, if the Construction Manager/Field Engineer(s) are unable to make final determination of compliance.

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

TASK - DELIVERABLES		
A.	Construction Contract and Documents	✓
B.	Pay Request Review Documentation	✓

5.0 Pre-Construction Coordination Phase

5.1 Prepare Project Files. This task is 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 Drawings, Specifications and Contract Documents, which 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. This task is to assure the pre-construction meeting has been scheduled and all necessary parties have been informed. The Engineer will conduct a pre-construction meeting to review FAA requirements prior to commencing construction. The meeting will be held at the airport and will include the Sponsor, FAA (if possible), contractor, sub-contractors, and airport tenants affected by the project.

5.3 Prepare/Submit Construction Management Plan. This task includes preparing and submitting the Construction Management Plan, which includes resumes of project personnel representing the stakeholders, detailed inspection procedures, required submittal processes, quality control testing methods, acceptance testing methods, and final test result summary forms. This item may be removed from Scope of Work if construction is less than \$250,000.

5.4 Review Contractor's Safety Plan Compliance Document. This task includes the review and to comment on the contractor's Safety Plan Compliance Document (SPCD) as required per *FAA Advisory Circular (AC) 150/5370-2F, Operation Safety on Airports during Construction*. The Engineer will review to ensure that all applicable construction safety items are addressed and meet the requirements of AC 150/5370-2F and the Contract's Construction Safety and Phasing Plan (CSPP). The bid documents will address the requirement for the contractor to submit a SPCD. The intent of the SPCD is to detail how the contractor will comply with the CSPP. Following award of the project to the successful contractor and prior to the issuance of the Notice to Proceed, the Engineer will review the SPCD and provide comments and ultimately approval of the document. It is anticipated that the document will require at least one re-submittal by the contractor to address any missing information.

TASK - DELIVERABLES		
A.	Pre-Construction Meeting Minutes	✓
B.	Construction Management Plan	✓

6.0 On-Site Construction Coordination Phase

This phase will consist of providing one full time Construction Manager. It will be the responsibility of the Construction Manager to facilitate sufficient on-site construction coordination to ensure that the project is completed according to good construction practice and is consistent with the Project Manager's direction. It is estimated that it will take 9 calendar days to complete construction of the project.

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 a minimum of 1 site visit to the project.

6.2 Resident Engineering. The Construction Manager will work approximately 12 hours per day. It is assumed that the Construction Manager will be able to complete all daily project documentation in the course of their shift and that total inspection on-site time is anticipated to be 9 calendar days.

6.3 Review Construction Submittals. This task will consist of reviewing and approving the shop drawings and material submittal data received from the contractor. Engineering field personnel will also review copies of the contractor's survey data and other construction items for general compliance with the construction documents.

6.4 Review Contractor Payroll Forms. Engineering field personnel will be required to conduct employee interviews and review contractor's weekly payroll records as required by the FAA. As part of this effort, all payrolls will be reviewed and logged when received. A log identifying current status of reviews, and any action taken to correct noted discrepancies, will be provided for Sponsor review at time of Request for Reimbursement (RFR) processing as appropriate.

6.5 Calculate Construction Quantities. Engineering field personnel will maintain record of the progress and will review the quantity records with the contractor on a periodic basis.

6.6 Periodic Cost Estimates. Engineering field personnel 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. The periodic cost estimate will also include all other costs associated with the project (administrative costs, engineering, any miscellaneous costs). After compiling all costs, the Engineer will then submit the period cost estimate to the Sponsor for payment.

6.7 Prepare Daily Reports. Engineering field personnel will maintain daily logs of the construction activities for the duration of time on site.

6.8 Prepare/Submit Weekly Reports. Engineering field personnel 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. Engineering field personnel will review and coordinate revisions by the contractor for quality control and the acceptance testing firm 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.

TASKS AND DATES		
A. Submittal Reviews	✓	✓
B. Payroll Reviews	✓	✓
C. Periodic Cost Estimates	✓	✓
D. Weekly Reports	✓	✓

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. The acceptance test summary report 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 Final Testing Report. The Engineer will submit the QA test summary report which will include narrative of tests taken, verification minimum number of tests, discussion of problems and testes necessary, table (from CMP) including the actual number of tests taken for each specification to the FAA for review/approval.

7.4 Prepare Engineering Record Drawings. The Engineer will prepare the record drawings indicating modifications made during construction.

7.5 Prepare Final Construction Report. The Engineer will prepare the final construction report.

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

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

TASK COMPLETION		
A. Punchlists	✓	✓
B. Final Testing Report		
C. Record Drawings		
D. Final Construction Report		
E. Project Cost Summary		

EX Reimbursable Costs during Construction

This section includes reimbursable items such as auto rental, mileage, lodging and per diem, travel and other miscellaneous costs incurred in order to complete Part B – Special Services.

Special Considerations

The following special considerations are required for this project but will be completed by sub-consultants to the Engineer. The cost for this work will be included in the engineering contract agreement with the Sponsor and the costs are in addition to the engineering fees outlined above.

Topographical Survey: Survey will be required in order to complete the design of the project. Survey shall include the following:

- The ground survey area is approximately 4.8 acres, with approximately 1.6 acres being high accuracy survey and 3.2 acres being GPS survey.
- Verification of the existing pavement elevations and infrastructure located within the project area.

- Verification of the existing terrain to create an accurate topographical drawing.
- All existing utilities in the project limits will be surveyed from locates performed prior to surveying operations.
- During design, there may be the need to verify other existing survey information or extend the limits of the existing survey.

Geotechnical Investigation: The existing Taxiway A7 shall be tested to determine the proper rehabilitative design procedures. This investigation will include the following:

- Visual inspection and documentation of the pavement areas
- Pavement coring and soil boring locations and laboratory testing at approximately 3 locations.
- Soil Classification/Atterberg Limits, Liquid Limit (LL), Plastic Limit (PL), Plasticity Index (PI)
- Moisture/Density Relations
- Swell/Consolidation Potential
- California Bearing Ratio (CBR)
- A final geotechnical report based on testing will be completed. This will include a write up with conclusions/recommendations, testing area map, and testing data.

Acceptance Testing: Acceptance testing will be performed under the direct supervision of engineering field personnel. 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-401 Plant Mix Bituminous Pavements and/or CDOT 401 Plant Mix Pavements

Assumptions

The scope of services described in the foregoing is based on several assumptions of responsibilities by the Engineer and Sponsor.

1. The Sponsor will provide existing mapping data in the project area including but not limited to: as-builts as available for the project areas, subsurface conditions information such as prior geotechnical investigations in the project area, and other available information in the possession of the Sponsor.
2. The Engineer will provide additional base mapping of existing topography, planimetric features, and underground utilities needed in the design phase of the project.
3. The Sponsor will coordinate with tenants as required to facilitate field evaluations and construction.
4. All engineering work shall be performed using accepted engineering principles and practices and shall provide quality products that meet or exceed industry standards. Dimensional criteria will be in accordance with FAA Advisory Circular 150/5300-13A Airport Design and related circulars. Construction specifications will be in accordance with AC 150/5370-10G Standards and the Northwest Mountain Regions Regional Updates for Specifying Construction of Airports and related circulars. Project planning, design, and construction will further conform to all applicable standards including all applicable current FAA Advisory Circulars and Orders required for use in AIP funded and PFC approved projects, and other national, state, or local regulations and standards as identified and relevant to an airfield design and construction project.

5. The Engineer will utilize the following computer software in the project:
 - AutoCAD Civil 3D
 - Microsoft Office Suite
6. The Engineer will utilize the following drawing standards in the project:
 - Drawing shall be prepared using the Engineer's standards unless the Sponsor provides its own standards upon Notice to Proceed.
 - Drawing elevations shall be vertical datum NAVD 88 derived from the existing control network.
 - Drawing coordinates shall be based on horizontal datum NAD 83/2007 State Plane Coordinates derived from the existing control network. (Paine Field Survey Control Drawing)
 - All drawings shall be stamped and signed by a registered Colorado professional engineer, or professional land surveyor as required.
7. The Engineer will utilize the following assumptions when preparing the project manual for bidding and construction of the project:
 - The project manual contract documents will be developed jointly by the Sponsor and the Engineer.
 - The Engineer is responsible for developing the contents of the document and including the Front End documents which will be supplied by the Sponsor.
 - The project will be bid Race-Neutral. DBE forms will be included for tracking purposes only. No goal is required.
 - FAA General Provisions and required contract language will be used.
8. The Engineer will maintain records of design analyses and calculations consistent with typical industry standards for a period of three years as required by FAA. These will be included in the Design Report.
9. The Engineer may reasonably rely upon the accuracy of data furnished by the Sponsor, or any other project participant not under contractual responsibility to the Engineer pursuant to the project and upon which the Engineer will base the services provided hereunder.
10. Because the Engineer has no control over the cost of construction-related labor, materials, or equipment, the Engineer's opinions of probable construction costs will be made on the basis of experience and qualifications as a practitioner of its profession. The Engineer does not guarantee that proposals for construction, construction bids, or actual project construction costs will not vary from Engineer's estimates of construction cost.

PART A - BASIC SERVICES

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost Summary
1.0 Preliminary Design Phase	\$255.00	\$200.00	\$135.00	\$150.00	\$85.00	\$85.00	\$45.00		
1.1 Meeting with the Sponsor and FAA		1						1	\$100.00
1.2 Prepare Project Report of Work and Contract	1	5					2	8	\$400.00
1.3 Project Coordination		1					2	3	\$150.00
1.4 Conduct Topographical Survey			4					4	\$200.00
1.5 Conduct Geotechnical Investigation			4					4	\$200.00
1.6 Prepare Environmental Checklist (CATEX)			20					20	\$1,000.00
1.7 Prepare Federal Class Application			2					2	\$100.00
Estimated Total Man-Hours		18	28	8	8	8	7	69	
Summary Costs	\$255.00	\$7,000.00	\$2,300.00	\$8.00	\$5.00	\$112.00	\$60.00		\$7,440.00

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost Summary
2.0 Design Phase	\$295.00	\$200.00	\$135.00	\$150.00	\$85.00	\$85.00	\$45.00		
2.1 Analyze Topographic Survey Data			4					4	\$200.00
2.2 Analyze Geotechnical Investigation Data		2	2					4	\$200.00
2.3 Prepare Preliminary Design		2						2	\$100.00
2.4 Prepare Preliminary Cost Estimate			2					2	\$100.00
2.5 Prepare Preliminary Contract Documents		4	2					6	\$300.00
2.6 Coordinate with City and Planning Dept (Z-20)		4	2					6	\$300.00
2.7 Prepare Preliminary Plans		4	2	24	40			70	\$3,500.00
2.8 Prepare Preliminary Technical Specifications		4	16					20	\$1,000.00
2.9 Prepare Preliminary Special Provisions			2					2	\$100.00
2.10 Coordinate with FAA Form 7460						2		2	\$100.00
2.11 Calculate Estimated Quantities				4				4	\$200.00
2.12 Prepare Estimate of Probable Construction Cost		2	4					6	\$300.00
2.13 Prepare Design Engineer's Report and Modification of Plans		4	20	16				40	\$2,000.00
2.14 Final Review of 30% Complete		4			4			8	\$400.00
2.15 In-House Quality Control			8					8	\$400.00
2.16 Prepare and Submit Final Plans and Specifications		4	8		16			28	\$1,400.00
Estimated Total Man-Hours		42	64	40	60	2	14	226	
Summary Costs	\$295.00	\$8,000.00	\$3,300.00	\$7,200.00	\$5,000.00	\$170.00	\$1,000.00		\$15,965.00

PART A - BASIC SERVICES (CONT.)

Item No.	Principal	Project Manager II	Associate Engineer	Designer	CADD Tech I	Project Coordinator	Support	Total Hours	Cost Summary
3.0 Bidding Phase	\$215.00	\$200.00	\$135.00	\$150.00	\$85.00	\$85.00	\$45.00		
3.1 Bid Abstract		4						4	\$200.00
3.2 Prepare/Conduct Pre-Bid Meeting		4						4	\$200.00
3.3 Prepare Abstracts		2	4					6	\$300.00
3.4 Consult with Prospective Bidders			4					4	\$200.00
3.5 Attend Bid Opening		4						4	\$200.00
3.6 Review Bid Proposals		3						3	\$150.00
3.7 Prepare Recommendations of Award		4						4	\$200.00
Estimated Total Man-Hours		21	8	8	8	4	3	52	
Summary Costs	\$215.00	\$6,320.00	\$1,080.00	\$8.00	\$6.00	\$320.00	\$180.00		\$7,839.00

PART B - SPECIAL SERVICES

Item No.	Principal	Project Manager/It	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost Summary
2.0 Construction Administration Phase	\$25.00	\$37.00	\$40.00	\$35.00	\$20.00	\$20.00	\$15.00		
2.1 Prepare Construction Contract and Documents		4		4		8		16	\$44.00
2.2 Office Assistance		1		1		2		4	1,184.00
2.3 Report for R/Inspection		2				4		6	190.00
2.4 Weekly/Monthly Reports		4						4	228.00
2.5 Monthly/Annual Review			2					2	360.00
2.6 Change Orders/Supply/Approval Documents		2	4	13	4	16	12	48	360.00
Estimated Total Man-Hours	0	28	16	18	12	16	12	84	3,612.00
Summary Costs	\$25.00	\$141.00	\$160.00	\$135.00	\$80.00	\$160.00	\$120.00		

Item No.	Principal	Project Manager/It	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost Summary
3.0 Pre-Construction Coordination Phase	\$25.00	\$37.00	\$40.00	\$35.00	\$20.00	\$20.00	\$15.00		
3.1 Prepare Project File			4					4	\$16.00
3.2 Prepare / Conduct Pre-Construction Meeting		3	4					7	\$11.00
3.3 Prepare / Submit Construction Management Plan		3	8					11	\$17.00
3.4 Review Contractor's Safety Plan Compliance Document			4					4	\$10.00
Estimated Total Man-Hours	0	6	16	0	0	0	0	14	1,384.00
Summary Costs	\$25.00	\$147.00	\$160.00	\$0.00	\$0.00	\$0.00	\$0.00		

PART B - SPECIAL SERVICES (CONVL)

Item No.	Principal	Project Manager/It	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost Summary
4.0 On-Site Construction Coordination Phase (9 Calendar Days)	\$45.00	\$37.00	\$40.00	\$35.00	\$20.00	\$20.00	\$15.00		
4.1 Field Inspection/Coordination		\$40.00						2	\$28.00
4.2 Resident Engineering			77					77	3,980.00
4.3 Review Contractor Submittals			8					8	\$30.00
4.4 Review Contractor Payroll Forms								2	\$14.00
4.5 Coordinate Construction Quarterly			4					4	\$20.00
4.6 Prepare Cost Estimates			4					4	\$20.00
4.7 Prepare Daily Reports			2					2	\$60.00
4.8 Prepare/Submit Weekly Reports		2	2					4	\$84.00
4.9 Review QC/QA Reports provided by Contractor			4					4	\$24.00
Estimated Total Man-Hours	0	\$8.00	119	0	0	0	0	124	4,980.00
Summary Costs	\$45.00	\$153.00	\$160.00	\$0.00	\$0.00	\$0.00	\$0.00		

Item No.	Principal	Project Manager/It	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost Summary
5.0 Post-Construction Coordination Phase	\$45.00	\$37.00	\$40.00	\$35.00	\$20.00	\$20.00	\$15.00		
5.1 Conduct Final Inspection		4	4					8	\$68.00
5.2 Coordinate Final Surveys			2					2	\$10.00
5.3 Prepare Final Working Report			4					4	\$40.00
5.4 Prepare Engineering Record Drawings		4	4		16			24	\$74.00
5.5 Prepare Final Construction Report			22					22	\$124.00
5.6 Reopen Project Costs			4					4	\$60.00
5.7 Assist with Project Arch		2						2	\$14.00
Estimated Total Man-Hours	0	18	82	0	16	0	0	96	3,612.00
Summary Costs	\$45.00	\$153.00	\$160.00	\$0.00	\$160.00	\$0.00	\$0.00		

Item No.	Principal	Project Manager/It	Construction Manager	Designer I	CADD Tech I	Project Coordinator	Administrative Support	Total Hours	Cost Summary
6.0 Topography Survey								2	\$200.00
Estimated Total Man-Hours	0	0	0	0	0	0	0	2	\$200.00
Summary Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		

Item No.			
SUB 2 SUB 2			
Construction Survey			\$ 1,000.00

Item No.			
SUB 3 SUB 3			
Acquisition Fee			\$ 8,000.00

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