

Appendix H: COST ESTIMATES

Prepared by Precision Approach Engineering, Inc.

La Grande / Union County Airport

Airport Master Plan Update

La Grande / Union County Airport CIP (DRAFT)

		Phase I (2016 - 2020)				Phase II (2021-2025)				Phase III (2026-2035)			
		FAA	State	Local	Other	Total	Description	Total	Description	Total	Description	Total	Description
1	2016	172,222				172,222	Install beacon tower and beacon, directly south of electrical building						
2	2016	472,222				472,222	Blast Pad - 150' x 200' (Design/Construct)						
3	2017	#REF!				#REF!	Rehab RW 16-34 (17-35) and TW D Rehab. (Include RW 16-34 MIRL, PAPI, widening (75'), and RW 16 Connector to TWA)						
4	2018	20,000				20,000	PMP (T/W B: Bwn 16-34 and 12-30: Crack Seal, Crack Repair, Seal Coat)						
5	2019	111,111				111,111	RW 12-30 Shoulder / RSA Pre-Design / Enviro						
6	2020	333,333				333,333	RW 12-30 Shoulder / RSA Design						
7	2017	#REF!				#REF!	USFS Rappel Base / Apron Improvements						
							Phase I Subtotals						
							Phase II (2021-2025)						
1	-					4,320,000	RW 12-30 Shoulder / RSA Construction (2021)						
2	-						PMP (2021)						
3	-					2,060,000	USFS - SFA Ramp Expansion (Phase 2)						
4	-					60,000	PMP (2024) [PMP Estimate provided by WHP]						
5	-					3,600,000	TW A Relocation & Extension, with lighting [Added complete new main drains, UD, Outfalls, and connection to existing]						
6	-					50,000	Development of Crew Camping [Assume 10 sites @ \$5K/EA]						
7	-					210,000	County Maintenance / Storage Facility [Assume 100' x 35' on pcc slab @ \$60/SF]						
8	-					191,000	Fencing along Pierce Road, with gates [Assume 9ft for 4600' @ \$35/LF = 6 gates @ \$5K/EA]						
9	-					2,750,000	Helicopter Ops Area - [Phase 1 of 3, Adjacent to GA Apron, extending south to existing entrance road to steel T-hangers, with 4 concrete pads for helicopters]						
9b	-					1,810,000	Helicopter Ops Area - [Phase 2 of 3, Adjacent to Helo ops Phase 1, extending south, encompassing location of existing T-hangers, (sited for demo or relocation) with 4 concrete pads for helicopters]						
10	-						R34 PAPI - [Included in Costs for RW 16-34 Rehabilitation]						
11	-						RZ areas - Acquire aviation easements						
12	-					19,500	Supplemental wind indicators [Assume 2 @ 6,500/EA]						
13	-					90,000	AWOS-III or ASOS Upgrade (Assume basic AWOS and upgrade to III)						
14	-					3,190,000	hangar development / demo (As shown on Draft AIP Update: 3 barks @ 400', varying sizes)						
15	-					1,960,000	Rehab and expand GA tie-down [Assume 30 new tie-down positions]						
16	-					180,000	Expand cargo apron [Assume 200' x 50 W/8-inch pcc slab]						
17	-					170,000	vehicle parking [Approx area = 250' x 100']						
18	-						utilities (tbd)						
							Phase II Subtotals						
							Phase III (2026-2035)						
1	-						EA for Parallel Taxiway E Development						
2	-					7,210,000	TW E Construction, with edge lighting. Likely EA effort required. [Added separate item for EA (above)]						
3	-					680,000	Full Perimeter Fencing (Assume 18,000' @ \$35.00/LF = 10 Gates @ \$5K/EA)						
4	-					2,050,000	Tanker Apron [Match approx area of existing Tanker Apron]						
5	9c					1,800,000	Helicopter Ops Area - [Phase 3 of 3, Adjacent to Helo ops Phase 2, extending south, to the end of extended parallel taxiway, with 4 concrete pads for helicopters]						
6	-					180,000	Update Master Plan						
							Phase III Subtotals						
							CIP Totals						

							To be included with rehab / mx projects						
							guidance signs						
							tw / tbd edge lighting						
							RELS 12, 16, 34						
							NEED TO INCLUDE REGULAR PAVEMENT MX						
							Include where appropriate in projects listed above.						
							"						
							"						
							You guys know these pavements better than anyone... What does the pavement maintenance cycle look like at LGO? Including low priority items, such as aprons/taxilanes?						

RUNWAY 12-30 DRAINAGE, SHOULDER AND RSA GRADING

YEAR Union County Airport **Phase - No.** 2-1 **Assumed Tasks:** Full Depth Shoulder
 RW Light and NAVAIDs Adjustments
 RSA/ROFA Grading
 Underdrains & Conveyance

Planning Level - Construction Estimate					
DESCRIPTION		Qty	Unit	Unit/Cost	Total Cost
Mobe/Demobe	12.0%	1	LS	\$321,134	\$321,134
Demolition		1	LS	\$25,000	\$25,000
Misc. Electrical		1	LS	\$100,000	\$100,000
Airfield lighting		1	LS	\$185,000	\$185,000
Misc. Drainage		1	LS	\$686,230	\$686,230
Unclassified Ex		8,250	CY	\$12	\$99,000
Unsuitable Ex		1,650	CY	\$14	\$23,100
Shoulder Grading		541,667	SY	\$0.75	\$406,250
Geotextile Fabric		16,500	SY	\$2	\$24,750
Subbase Course		8,440	CY	\$25	\$211,003
Crushed Aggregate Base		5,093	CY	\$35	\$178,241
Bituminous Asphalt		7,130	TON	\$95	\$677,315
Existing Pavement Removal		12,045	SY	\$5	\$60,225
Subtotal:					\$2,997,248
Construction Cost Contingency:					\$449,587
Total Construction:					\$3,446,835
Admin and Engineering:					\$865,156
TOTAL PROJECT ESTIMATE					\$4,320,000

Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000

USFS - SEAT RAMP EXPANSION

Assumed Tasks: Apron Expansion as shown in ALP Draft
 Full Depth Pavement - Heavy USFS
 Prior USFS Section

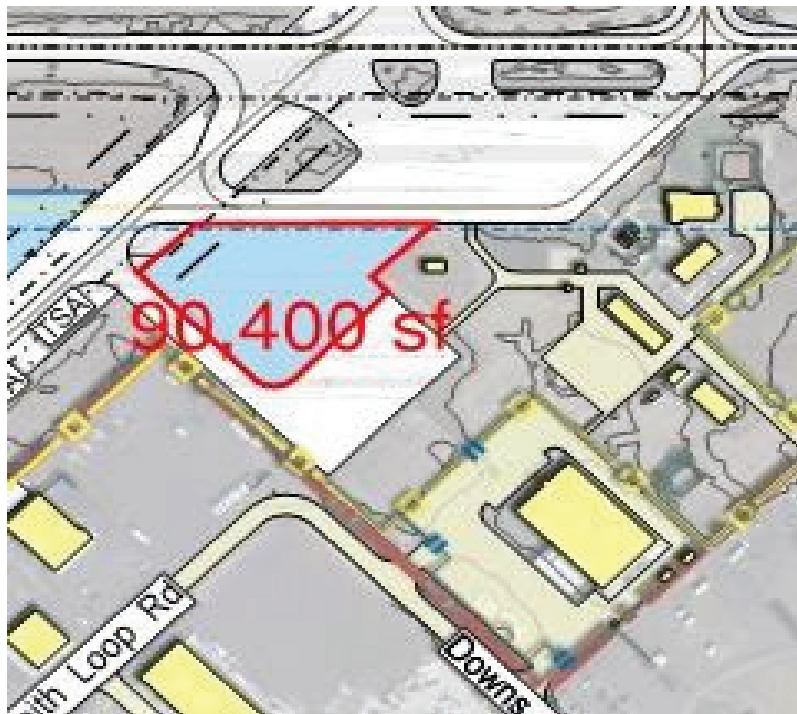
YEAR **Phase - No.**
 Union County Airport 2-3

Planning Level - Construction Estimate					
DESCRIPTION		Qty	Unit	Unit/Cost	Total Cost
Mobe/Demobe	12.0%	1	LS	\$152,848	\$152,848
Demolition		1	LS	\$5,000	\$5,000
Misc. Electrical		1	LS	\$25,000	\$25,000
Misc. Drainage		1	LS	\$25,000	\$25,000
Unclassified Ex		10,602	CY	\$8	\$84,820
Unsuitable Ex		2,120	CY	\$14	\$29,687
Geotextile Fabric		10,044	SY	\$2	\$15,067
Subbase Course		6,585	CY	\$50	\$329,235
Crushed Aggregate Base		3,348	CY	\$60	\$200,889
Bituminous Asphalt		5,859	TON	\$95	\$556,630
Marking		1,200	SF	\$2	\$2,400

Subtotal: \$1,426,574
 Construction Cost Contingency: \$213,986
 Total Construction: \$1,640,561
 Admin and Engineering: \$411,781

TOTAL PROJECT ESTIMATE	\$2,060,000
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Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000



TAXIWAY A RELOCATION

YEAR Phase - No.
 Union County Airport 2-5

Assumed Tasks Full Depth Pavement
 includes extension and Run-up Apron to 34 end
 PAPI on both ends
 Includes T/W Lighting and Guidance Signs
 New main drains, Underdrains, and conx to existing
 No REIL

Planning Level - Construction Estimate					
DESCRIPTION		Qty	Unit	Unit/Cost	Total Cost
Mobe/Demobe	12.0%	1	LS	\$267,874	\$267,874
Demolition		1	LS	\$20,000	\$20,000
Misc. Electrical		1	LS	\$25,000	\$25,000
Airfield lighting		1	LS	\$329,600	\$329,600
T/W Guidance Signs		7	EA	\$7,500	\$52,500
6" Perf		6,120	LF	\$24	\$146,880
Cleanout		13	EA	\$250	\$3,250
Access Structures		13	EA	\$3,500	\$45,500
connections/outfalls		13	EA	\$1,000	\$13,000
Manholes/Catchbasins		15	EA	\$4,500	\$67,500
12' - 24" HDPE		7,000	LF	\$80	\$560,000
Misc. Storm Drain		1	LS	\$50,000	\$50,000
Unclassified Ex		8,080	CY	\$8	\$64,642
Unsuitable Ex		1,616	CY	\$14	\$22,625
Shoulder Grading		8,867	SY	\$0.75	\$6,650
Geotextile Fabric		13,222	SY	\$2	\$19,833
Subbase Course		5,289	CY	\$50	\$264,444
Crushed Aggregate Base		2,938	CY	\$60	\$176,296
Bituminous Asphalt		3,085	TON	\$95	\$293,093
Marking		5,125	SF	\$2	\$10,250
Subtotal:					\$2,500,156
Construction Cost Contingency:					\$375,023
Total Construction:					\$2,875,180
Admin and Engineering:					\$721,670
TOTAL ESTIMATE					\$3,600,000

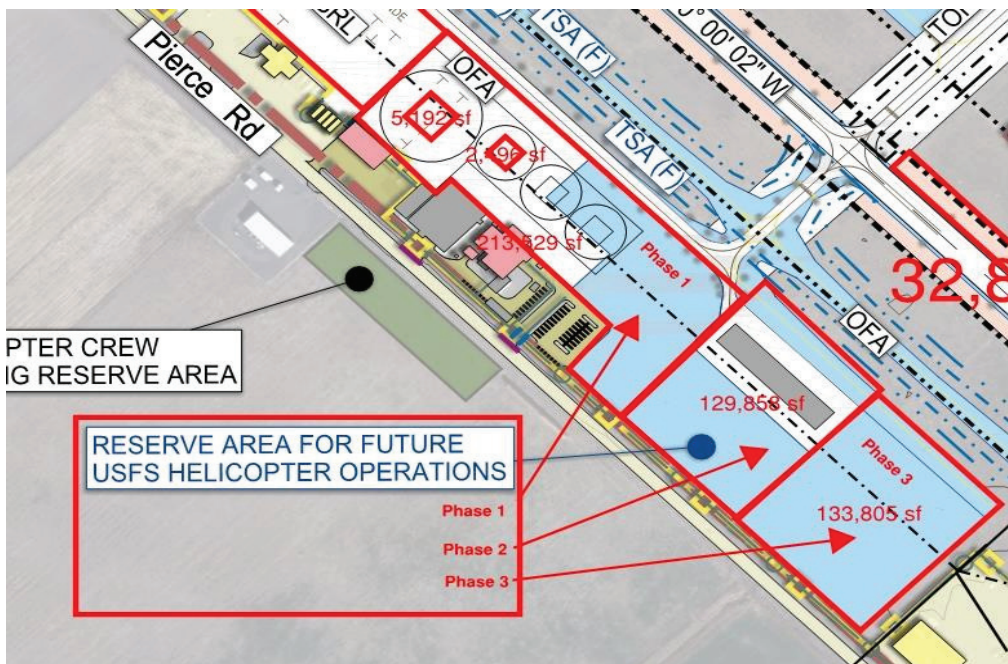
Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000

Helicopter Operations Area, Phase 1 of 3

YEAR **Phase - No.** **Assumed Tasks:** Per defined area from ALP draft
 Union County Airport 2-9 Full Depth Pavement - Typical Asphalt Section
 Assume 2 large pcc helipad landing/parking
 Assume 2 small/medium helipad/landing
 Old Cache Bldg Demo NOT included

Planning Level - Construction Estimate					
DESCRIPTION		Qty	Unit	Unit/Cost	Total Cost
Mobe/Demobe	12.0%	1	LS	\$204,539	\$204,539
Misc. Electrical		1	LS	\$25,000	\$25,000
Misc. Drainage		1	LS	\$50,000	\$50,000
Unclassified Ex		15,883	CY	\$8	\$127,062
Unsuitable Ex		3,177	CY	\$14	\$44,472
Geotextile Fabric		22,871	SY	\$2	\$34,307
Large pcc Helipad		2	EA	\$25,637	\$51,274
Small pcc Helipad		2	EA	\$12,325	\$24,649
Subbase Course		7,624	CY	\$50	\$381,187
Crushed Aggregate Base		5,360	CY	\$60	\$321,590
Bituminous Asphalt		6,715	TON	\$95	\$637,945
Marking		3,500	SF	\$2	\$7,000
Subtotal:					\$1,909,025
Construction Cost Contingency:					\$286,354
Total Construction:					\$2,195,379
Admin and Engineering:					\$551,040
TOTAL PROJECT ESTIMATE					\$2,750,000

Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000



Helicopter Operations Area, Phase 2 of 3

YEAR **Phase - No.** **Assumed Tasks:** Per defined area from ALP draft
 Union County Airport 2-9a Full Depth Pavement - Typical Asphalt Section
 Assume 2 large pcc helipad landing/parking
 Assume 2 small/medium helipad/landing
 Old Cache Bldg Demo NOT included

Planning Level - Construction Estimate					
DESCRIPTION	Qty	Unit	Unit/Cost	Total Cost	
Mobe/Demobe	12.0%	1	LS	\$134,318	\$134,318
Demolition/Relocation	1	LS		\$35,000	\$35,000
Misc. Electrical	1	LS		\$25,000	\$25,000
Misc. Drainage	1	LS		\$50,000	\$50,000
Unclassified Ex	9,427	CY		\$8	\$75,414
Unsuitable Ex	1,885	CY		\$14	\$26,395
Geotextile Fabric	13,574	SY		\$2	\$20,362
Large pcc Helipad	2	EA		\$25,637	\$51,274
Small pcc Helipad	2	EA		\$12,325	\$24,649
Subbase Course	4,525	CY		\$50	\$226,241
Crushed Aggregate Base	3,294	CY		\$60	\$197,633
Bituminous Asphalt	4,004	TON		\$95	\$380,347
Marking	3,500	SF		\$2	\$7,000

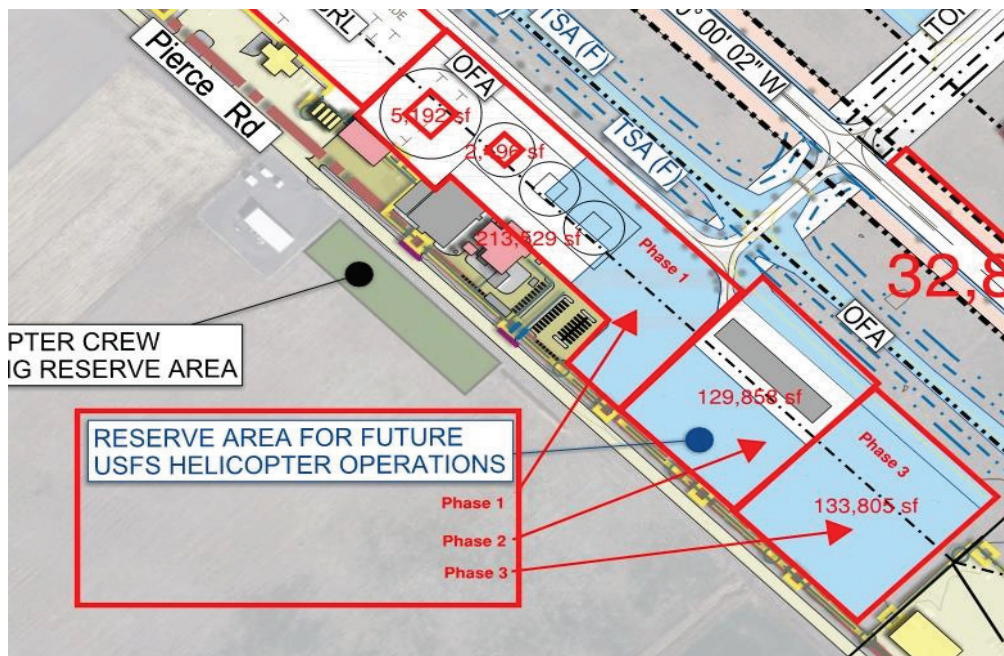
Subtotal: \$1,253,632
 Construction Cost Contingency: \$188,045

 Total Construction: \$1,441,676

 Admin and Engineering: \$361,861

TOTAL PROJECT ESTIMATE \$1,810,000

Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000



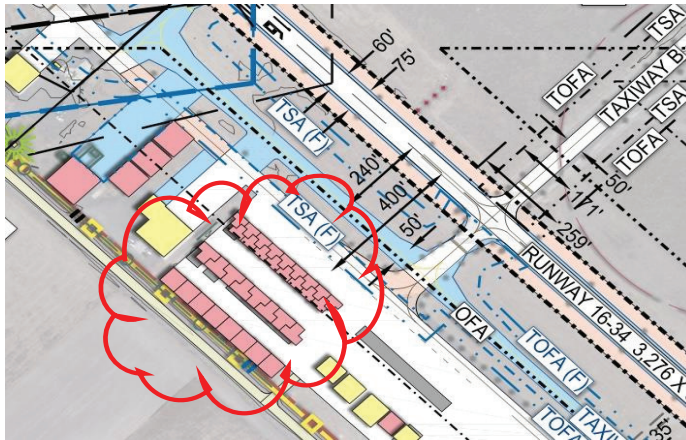
HANGAR DEVELOPMENT AND TAXILANES

YEAR Union County Airport **Phase - No.** 2-14 **Assumed Tasks:** 8-Inch slabs, P-501
 (3) hangar runs, each 400' long
 various sizes and openings

Planning Level - Construction Estimate					
DESCRIPTION	Qty	Unit	Unit/Cost	Total Cost	
Mobe/Demobe	12.0%	1	LS	\$237,487	\$237,488
Demolition	1	LS	\$	28,000	\$28,000
Misc. Electrical	1	LS	\$15,000.00	\$15,000	\$15,000
Hangar power/lighting	1	LS	\$35,000.00	\$35,000	\$35,000
Storm system conveyance	1	LS	\$25,000.00	\$25,000	\$25,000
Unclassified Ex	4,750	CY	\$8.00	\$38,000	\$38,000
Unsuitable Ex	396	CY	\$14.00	\$5,542	\$5,542
Demo Existing Hangars	28,000	LS	\$0.75	\$21,000	\$21,000
Small nested T's	19	EA	\$	24,414	\$463,858
Medium nested T's	15	LS	\$	42,333	\$635,000
Large Single Hangars	8	LS	\$	61,728	\$493,827
Taxilane Pavement Section	1	LS	\$	215,833	\$215,833
Marking	1,500	SF	\$2.00	\$3,000	\$3,000
Subtotal:				\$2,216,548.19	\$2,216,548.19
Construction Cost Contingency:				\$332,482	\$332,482
Total Construction:				\$2,549,030	\$2,549,030
Admin and Engineering:				\$639,807	\$639,807

TOTAL PROJECT ESTIMATE \$3,190,000.00

Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000



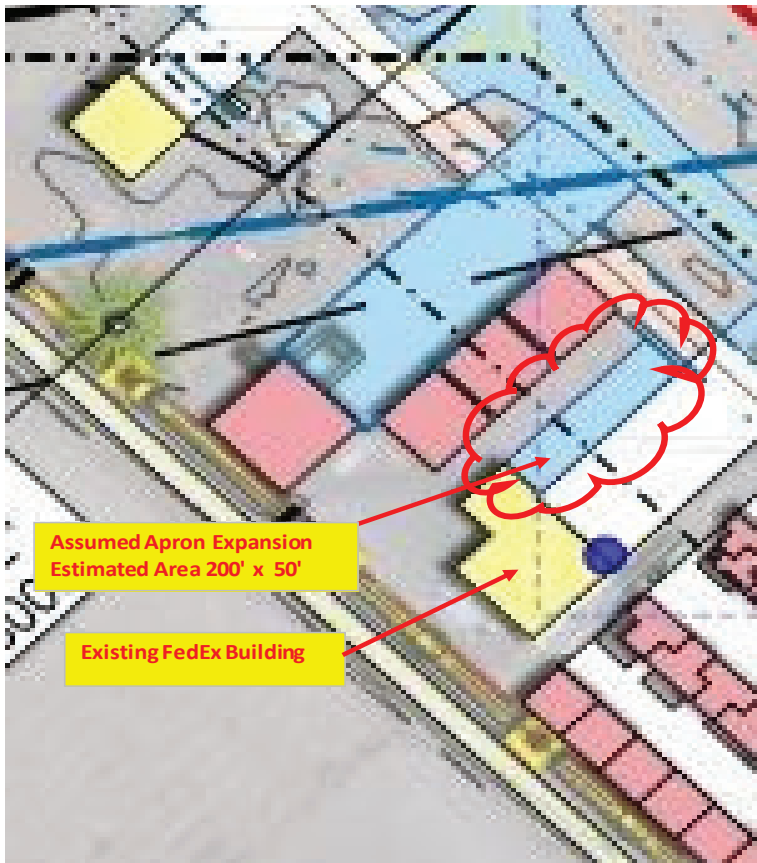
FED EX APRON EXPANSION

YEAR Union County Airport
 Phase-No. 2-16
 Assumed Tasks: Full Depth P-501 Pavement 8" Depth
 Minor Elec and Drainage

Planning Level - Construction Estimate					
DESCRIPTION		Qty	Unit	Unit/Cost	Total Cost
Mobe/Demobe	12.0%	1	LS	\$13,259.00	\$13,259
Misc. Electrical		1	LS	\$2,500.00	\$2,500
Misc Drainage		1	LS	\$6,000.00	\$6,000
6" Perf		400	LF	\$24.00	\$9,600
Unclassified Ex		222	CY	\$15.00	\$3,333
Unsuitable Ex		44	CY	\$20.00	\$889
Geotextile Fabric		1,111	SY	\$1.50	\$1,667
Subbase Course		267	CY	\$50.00	\$13,333
Crushed Aggregate Base		285	CY	\$60.00	\$17,111
Structural Concrete		1,111	SY	\$44	\$49,383
Marking		250	SF	\$2.00	\$500
Subtotal:					\$123,742.83
Construction Cost Contingency:					\$18,561
Total Construction:					\$142,304.25
Admin and Engineering:					\$35,718

TOTAL PROJECT ESTIMATE \$180,000.00

Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000



PARKING AREA OFF PIERCE ROAD

YEAR Union County Airport **Phase - No.** 2-17 **Assumed Tasks:** Area undefined by color/location on ALP
 Full Depth Pavement - Typical roadway section
 Use local/state rock and AC and adjusted costs
 Misc drainage and electrical

Planning Level - Construction Estimate					
DESCRIPTION		Qty	Unit	Unit/Cost	Total Cost
Mobe/Demobe	12.0%	1	LS	\$12,651	\$12,651
Demolition		1	LS	\$2,500	\$2,500
Misc. Drainage		1	LS	\$5,000	\$5,000
Misc. Drainage		1	LS	\$6,000	\$6,000
Unclassified Ex		1,121	CY	\$8.00	\$8,966
Unsuitable Ex		224	CY	\$14.00	\$3,138
Geotextile Fabric		2,373	SY	\$1.50	\$3,560
Subbase Course		752	CY	\$35.00	\$26,304
Crushed Aggregate Base		396	CY	\$45.00	\$17,800
Bituminous Asphalt		415	TON	\$75.00	\$31,150
Marking		500	SF	\$2.00	\$1,000

Subtotal: \$118,069.44
 Construction Cost Contingency: \$17,710

 Total Construction: \$135,779.86

 Admin and Engineering: \$34,081

TOTAL PROJECT ESTIMATE \$170,000.00

Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000



USFS TANKER APRON

YEAR Phase - No.
 Union County Airport 3-3

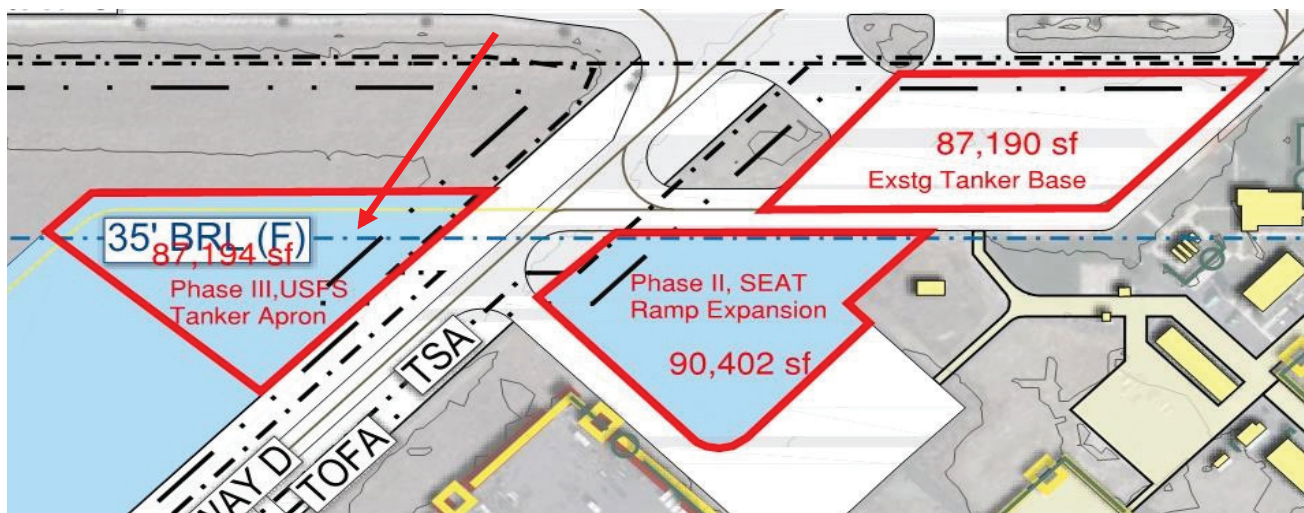
Assumed Tasks: New Tanker apron area North Side T/W D
 Match Exstg Apron Area
 Full Depth Pavement - Heavy USFS
 Prior USFS Section

Planning Level - Construction Estimate					
DESCRIPTION		Qty	Unit	Unit/Cost	Total Cost
Mobe/Demobe	12.0%	1	LS	\$152,441	\$152,441
Demolition		1	LS	\$5,000	\$5,000
Misc. Electrical		1	LS	\$15,000	\$15,000
Airfield lighting		1	LS	\$0	\$0
Misc. Drainage		1	LS	\$50,000	\$50,000
Unclassified Ex		11,399	CY	\$8	\$91,194
Unsuitable Ex		2,280	CY	\$14	\$31,918
Shoulder Grading		2,917	SY	\$0.75	\$2,188
Geotextile Fabric		10,799	SY	\$2	\$16,199
Subgrade Stabilization		-	CY	\$35	\$0
Subbase Course		4,800	CY	\$50	\$239,985
Crushed Aggregate Base		3,600	CY	\$60	\$215,987
Bituminous Asphalt		6,300	TON	\$95	\$598,463
Marking		2,200	SF	\$2	\$4,400

Subtotal: \$1,422,775
 Construction Cost Contingency: \$213,416
 Total Construction: \$1,636,191
 Admin and Engineering: \$410,684

TOTAL PROJECT ESTIMATE \$2,046,874.98

Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000



Helicopter Operations Area, Phase 3 of 3

YEAR **Phase - No.** **Assumed Tasks:** Per defined area from ALP draft
 Union County Airport 3-4 Full Depth Pavement - Typical Asphalt Section
 Assume 2 large pcc helipad landing/parking
 Assume 2 small/medium helipad/landing

Planning Level - Construction Estimate					
DESCRIPTION		Qty	Unit	Unit/Cost	Total Cost
Mobe/Demobe	12.0%	1	LS	\$133,629	\$133,629
Misc. Electrical		1	LS	\$25,000	\$25,000
Misc. Drainage		1	LS	\$50,000	\$50,000
Unclassified Ex		9,731	CY	\$8	\$77,850
Unsuitable Ex		1,946	CY	\$14	\$27,248
Geotextile Fabric		14,013	SY	\$2	\$21,020
Large pcc Helipad		2	EA	\$25,637	\$51,274
Small pcc Helipad		2	EA	\$12,325	\$24,649
Subbase Course		4,671	CY	\$50	\$233,550
Crushed Aggregate Base		3,391	CY	\$60	\$203,480
Bituminous Asphalt		4,132	TON	\$95	\$392,499
Marking		3,500	SF	\$2	\$7,000

Subtotal: \$1,247,198

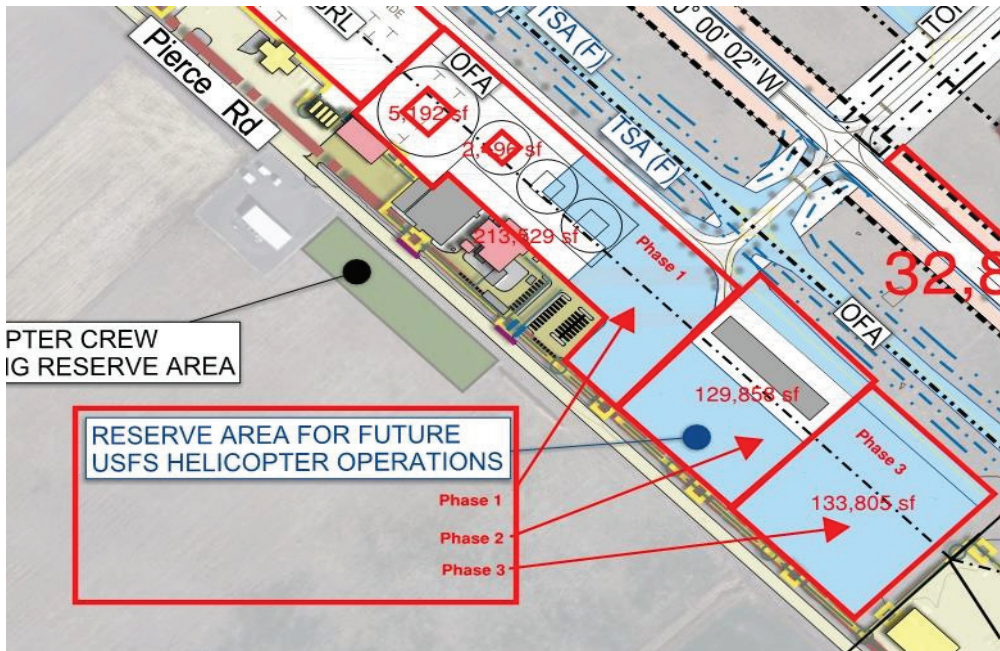
Construction Cost Contingency: \$187,080

Total Construction: \$1,434,278

Admin and Engineering: \$360,004

TOTAL PROJECT ESTIMATE \$1,800,000

Total Project Cost Estimates - in 2016 Dollars [No Inflation], rounded up to nearest \$10,000



Helipad Costs

4/13/2016

PJM

Type 1 30'x30' Concrete Reinforced Pad, 6" thick
 72'x72' Gravel TLOF, 6" thick

			2009	2017		
Item	Unit	Quantity	\$/Unit	\$/Unit	\$/Item	
Unclassified Excavation	CY	190.1	\$ 11.00	\$ 13.93	\$ 2,648.66	
Concrete Helipad Type 1	SY	100.0	\$ 80.00	\$ 101.34	\$ 10,134.16	
Aggregate Base (P-209) - TFOL	CY	246.0	\$ 30.00	\$ 38.00	\$ 9,348.76	
Tie Down Anchors	EA	4	\$ 500.00	\$ 633.39	\$ 2,533.54	
Striping	LS	1	\$ 500.00	\$ 633.39	\$ 633.39	
Sub Total					\$ 25,298.51	
Contingency			20%		\$ 5,059.70	
Mobilization			10%		\$ 2,529.85	
Surveying			5%		\$ 1,264.93	
Construction SubTotal					\$ 34,152.99	
Engineering			12%		\$ 4,098.36	
Inspection			15%		\$ 5,122.95	
Admin			5%		\$ 1,707.65	
Engineering SubTotal					\$ 10,928.96	
Total Helipad Cost					\$ 45,081.95	

Type 2 20'x20' Concrete Reinforced Pad, 6" thick
 50'x50' Gravel TLOF, 6" thick

			2009	2017		
Item	Unit	Quantity	\$/Unit	\$/Unit	\$/Item	
Unclassified Excavation	CY	91.7	\$ 11.00	\$ 13.93	\$ 1,277.33	
Concrete Helipad Type 1	SY	44.4	\$ 80.00	\$ 101.34	\$ 4,504.07	
Aggregate Base (P-209) - TFOL	CY	122.2	\$ 30.00	\$ 38.00	\$ 4,644.82	
Tie Down Anchors	EA	4	\$ 500.00	\$ 633.39	\$ 2,533.54	
Striping	LS	1	\$ 500.00	\$ 633.39	\$ 633.39	
Sub Total					\$ 13,593.15	
Contingency			20%		\$ 2,718.63	
Mobilization			10%		\$ 1,359.31	
Surveying			5%		\$ 679.66	
Construction SubTotal					\$ 18,350.75	
Engineering			12%		\$ 2,202.09	
Inspection			15%		\$ 2,752.61	
Admin			5%		\$ 917.54	
Engineering SubTotal					\$ 5,872.24	
Total Helipad Cost					\$ 24,222.99	