



U.S. Department
of Transportation

**Federal Aviation
Administration**

January 24, 2011

FAA Alaskan Region
222 W. 7th Avenue, Box 14
Anchorage, Alaska
99513-7587

Tom Schmid, PE
Aviation Design, Central Region DOTPF
PO Box 196900
Anchorage, Alaska 99519-6900

Dear Mr. Schmid:

Crooked Creek Airport
"Revised" Airport Layout Plan (ALP) Approval

We have completed a review of the "Revised" ALP for the Crooked Creek Airport. The ALP is conditionally approved. This approval is subject to the condition that future development may not be undertaken without environmental approval by the Federal Aviation Administration.

Since the waste facilities separation requirement do not meet the standards set by AC 150/5200-33B and the runway will be shifted in an area of various wildlife attractants, a Wildlife Hazard Assessment (WHA) needs to be conducted. Please complete a WHA prior construction is initiated. Recommendations from the WHA applicable to the airport need to be implemented by the airport sponsor and recommendations applicable to the waste facilities need to be incorporated into the DEC permitting conditions.

Please note that future development at this airport will require an ALP "update" using the current advisory circular on airport design (AC150/5300-13).

We have enclosed a copy of the signed ALP for your records. Contact Gabriel Mahns at 271-3665 if you have any questions.

Sincerely,

Pat Oien, Lead Planner
Airports Division

Enclosures:
Crooked Creek ALP

A. Purpose

This Narrative Report describes the features of the existing Crooked Creek Airport, planned development for near-term and ultimate development and the issues associated with its design and operation. All airport features conform to FAA AC 150/5070-6B. This project is being designed in English units. The rationale for improvement to the Crooked Creek airport is outlined below.

B. Introduction

The community of Crooked Creek lies on the north bank of the Kuskokwim River at its junction with Crooked Creek. It is located in the Kilbuk-Kuskokwim Mountains 50 miles northeast of Aniak, 141 miles northeast of Bethel, and 275 miles west of Anchorage.

C. Aviation Activities**1. Current Usage**

The Alaska Aviation System Plan (AASP) classifies Crooked Creek as a Community Airport. Flights at the airport support passenger traffic, medical evacuations (medevac), school activities, and mail and freight distribution. Two aircraft, a Cessna 182 and a Piper Super Cub, are based at the airport. Two air taxis operate regularly at the airport; these carriers normally use the Cessna 207 and the Cessna 208 Caravan. Occasionally, a Casa 212 operates at the airport. Two cargo carriers that operate C-46 and DC-6 aircraft at Aniak would use the Crooked Creek airport occasionally if the runway were longer. The medevac aircraft utilized in the area is the Cessna 208 Caravan.

2. Forecasted Usage

Table 1 shows the aviation demand forecasts, which were prepared for the Crooked Creek Airport Master Plan. The passenger and aircraft operations forecasts have been approved by the FAA.

TABLE 1: AVIATION DEMAND FORECASTS

Aviation Type	Base Year	Forecast Years			
	2000	2007	2012	2022	2027
Passenger Enplanements	661	1,280	1,520	2,100	2,320
Aircraft Operations					
Air Carrier	0	0	0	0	0
Air Taxi	1,436	1,636	1,800	2,161	2,390
General Aviation	120	137	151	180	200
Military	0	0	0	0	0
Total Operations	1,556	1,773	1,951	2,341	2,590
Cargo					

Deplaned Mail (lbs)	195,716	291,100	336,300	439,700	462,130
Deplaned Freight (lbs)	*108,500	116,300	122,300	135,100	141,990
Total Cargo (lbs)	304,216	407,400	458,600	574,800	604,120

*Average of 1999 and 2000

Forecasts for Crooked Creek passengers and mail were adopted from the Yukon-Kuskokwim Delta Transportation Plan, March 2002, and interpolated for the milestone years. The forecast for aircraft operations used a 2% annual growth rate, selected from low (1%), medium (2%), and high (5%) annual growth rate forecasts. The freight forecast used a 1% annual growth rate, which matched Crooked Creek's historical population growth rate.

The most demanding aircraft that regularly use the airport are in Airport Reference Code (ARC) A-II and B-I. Regular use is defined as at least 500 annual itinerant operations. In 2000, the base year for the forecasts prepared for the Crooked Creek Master Plan, there were an estimated 539 operations by A-II aircraft (mostly Cessna 208 Caravan and some Casa 212) and 538 operations by B-I aircraft. The Piper Navajo (ARC B-I) would be used more often if the airport had a longer runway. The aircraft in regular use have maximum takeoff weights under 12,500 pounds. The Casa 212 (ARC A-II, 16,976 lb. maximum weight) is used occasionally for air freight.

The *Yukon-Kuskokwim Delta Transportation Plan* projected that for Crooked Creek and the four other village airports nearby, the design aircraft from 2010 through 2020 would be a 9-seat aircraft. The 9-seat aircraft used in the area are the Piper Navajo and Cessna 208 Caravan. The appropriate ARC for future airport design at Crooked Creek would be B-II.

The Donlin Mine, located approximately 12 miles northwest of the community of Crooked Creek, has the potential for large-scale mining operations. Initial planning efforts looked at enlarging the Crooked Creek Airport to accommodate construction of the mine, under an assumption that a road would be constructed between the Kuskokwim River at Crooked Creek and the mine. However, the current expectation is that the mine will have its own airport (at the mine site) and port facilities (8 miles downstream from confluence of Crooked Creek and the Kuskokwim River), with the connecting road likely following the Jungjuk Creek drainage and bypassing the community of Crooked Creek. Therefore, the mine's impact on the Crooked Creek community is expected to be minimal, as the only changes to Crooked Creek enplanements and operations would result from community members traveling more or importing more goods thanks to increased disposable income from employment opportunities at the mine. It is not anticipated that this increase would change the aircraft mix, but rather that a few more operations would occur. The proposed single runway configuration can handle substantially more volume than forecast even with this potential increase in operations.

D. Design Rationale

1. Airport Reference Code (ARC)

According to the aeronautical forecast, improvements at this facility should meet the design standards for Airport Reference Code B-II, as established in AC 150/5300-13. This ALP proposes features consistent with that standard.

TABLE 2: CRITICAL AIRCRAFT PIPER NAVAJO

Approach Speed	> 91 but < 121 knots
Wingspan	40 feet 8 inches
Tail Height	13 feet
Weight	7,800 pounds

The Master Plan recommendation for initial runway length is 3,300 feet, which is also the recommendation of the Yukon-Kuskokwim Transportation Plan for Crooked Creek Airport and the minimum runway length recommended for community airports by Statewide Aviation. One reason for Statewide Aviation's 3,300-foot recommendation is to meet the minimum length (3,200 feet) that FAA requires for the airport to have an instrument approach. The new airport is planned for GPS instrument approaches with visibility minimums as low as 1 statute mile.

The airport property boundary and layout should facilitate expansion of the runway to 3,800 feet, a length that will be needed within the 20-year planning period. Of the 9-seat aircraft in regional service, the one requiring the longest runway is the Piper Navajo (ARC B-I). According to the Navajo's performance chart, its required runway length is 3,800 feet. The proposed near-term runway length of 3,300 feet may force carriers to reduce payloads for this aircraft, depending on temperature and wind. According to the Navajo's performance chart, the aircraft's maximum takeoff weight must be reduced by 850 lbs (12%) when the runway length 3,300 feet instead of 3,800 feet (assuming no headwind and 69.7°F = mean maximum monthly temperature). According to the airport master plan, of the 336 aircraft in regional air service in the Yukon-Kuskokwim Delta, 58 are Navajos, which validates the conclusion that the Navajo will ultimately be the critical aircraft for Crooked Creek Airport.

Although the threshold of 500 annual itinerant operations by an aircraft with a maximum takeoff weight over 12,500 pounds is not projected within the 20-year planning period, the airport will occasionally be used by aircraft over 12,500 pounds.

2. Wind Coverage

Wind data was collected from the Automated Weather Observation System (AWOS) at Crooked Creek Airport over the thirteen-month period from February 2002 through March 2003. Table 3 summarized the wind coverage analysis.

TABLE 3: WIND COVERAGE

Runway	10.5 knots	13 knots
Existing 13/31	99.22%	99.71%
Near-Term/Ultimate 14/32	99.13%	99.68%

3. Airport Facilities

Existing, proposed, and future airport design dimensions are shown in Table 4.

TABLE 4: EXISTING CONDITIONS COMPARED TO FACILITY REQUIREMENTS

Feature	Existing Conditions	Near-Term Facility Requirements	Ultimate Facility Requirements
Runway Length	2,000'	3,300'	3,800'
Runway Width	60'	75'	75'
Runway safety Area Width	120'	150'	150'
Runway Surface	Gravel	Gravel	Gravel
Taxiway/Safety Area Width	35'/49'	50'/118'	50'/118'
Apron	37,500 sq ft (150' x 250')	60,000 sq ft (200' x 300')	100,000 sq ft (200' x 500')
Apron Offset	190'	400'	400'
Runway Protection Zone (RPZ)	250'x450'x1,000'	500'x700'x1,000'	500'x700'x1,000'
Navigational Aids	None	AWOS, GPS, PAPI, REIL, rotating beacon	AWOS, GPS, PAPI, REIL, rotating beacon
Lighting	None	MIRL	MIRL
Lease Lots	None	See note	See note
Access	Existing Road	New Road	New Road

Note: No formal guidance exists for the minimum amount of lease area to provide. Stage I development will provide for a total of two lots, each 100'x150' with 50' in front of the BRL. Stage III (or sooner if demand warrants) will expand these areas adjacent to the proposed apron and add a second tier of lease lots as demand warrants.

E. Unusual Design Features

The taxiway and taxiway safety area widths have been sized to Design Group III standards to provide additional snow storage area and allow for occasional use by larger aircraft.

Non-standard conditions are discussed below.

1. Solid Waste Facilities

According to FAA Advisory Circular (AC) 150/5200-33B (2007), solid waste disposal facilities, including sewage lagoons, are considered incompatible if located within 5,000 feet of a runway used by piston-type aircraft or 10,000 feet from a runway used by a turbine-powered aircraft. The airport will be located approximately 3,045 feet east of the village landfill and approximately 2,375 feet from the sewage lagoon. Therefore, the airport will not meet the FAA-required separation distance from landfills and sewage lagoons. The EA states that the FAA National Wildlife Strike Database does not list any conflicts at Crooked Creek.

2. Runway Profile

The existing runway profile does not meet the line of sight requirements specified in the current FAA AC 150/5300-13, Section 503, Line of Sight Standards. The near-term and ultimate profiles are designed to meet this standard.

3. Residence within RPZ

A residence lies within the RPZ for existing Runway 31, which is a prohibited land use per FAA Advisory Circular 150/5300-13 CHG 14, Section 212a(2)(b). The near-term and ultimate layouts are designed to eliminate any residences or places of public assembly from within the RPZ.

4. Airspace Obstructions

Due to the hilly terrain, penetrations of the FAR Part 77 horizontal and conical surfaces exist (see ALP sheet 6 of 9). However, to minimize the airspace obstructions, earthwork will be completed to clear terrain penetrations within the primary surface. Trees within the property will also be cleared.

Upgrading the facility from a utility runway with 20:1, 5,000-foot approach surface to a larger-than-utility runway with 34:1, 10,000-foot approach surface was considered in the early stages of the Crooked Creek Airport Master Plan. It was determined that removing terrain obstructions from the 34:1 approach surface on the north end would be impractical, and even if this approach surface were clear, no reduction in visibility minimums was likely due to the mountainous terrain surrounding the airport. At FAA's request, a new analysis was conducted to determine the potential for an approach up the Crooked Creek valley that would have an unobstructed PAPI Obstacle Clearance Surface (OCS).

The PAPI Approach OCS Analysis Technical Memorandum prepared in January 2007 determined that a clear PAPI OCS approach for the Crooked Creek Airport was achievable. Prior to the study, the ALP for the Crooked Creek Airport planned a runway extension on the existing alignment. As a result of the study, the proposed and ultimate runway alignment has been rotated 7 degrees clockwise, providing an alignment that has a clear PAPI OCS (2°50', or 20.2:1) with the option for instrument approaches.

5. Airspace Map Source

Two different sources of mapping were used to complete the airspace review. The project area was mapped (to a 2-foot contour interval) based on NAVD 88 and NAD 83 vertical and horizontal control. This map had limited coverage and was combined with the USGS Quad maps (NAVD 29 and NAD 27). The primary and transitional surfaces were evaluated based on the controlled aerial mapping (with a 2-foot contour interval). The remaining surfaces were evaluated based on the USGS Quad maps (which have a 100-foot contour interval). It appears the aerial mapping shows terrain 30 to 60 feet lower in elevation than the USGS Quad maps.

The USGS mapping is prepared to National Map Accuracy Standards, which requires that 90% of all elevations be within half a contour interval (i.e., plus or minus 50 feet). The PAPI Approach OCS Analysis Technical Memorandum prepared in January 2007 verified that the USGS mapping was accurate to within these tolerances. However, the elevations evaluated in the Tech Memo were found to be more accurate near vertical angle bench marks (VABM's) located on the mountain tops than the evaluated elevations in the valleys and hillsides.

F. Staged Development

Development of Crooked Creek Airport over the 20-year planning period will occur in two phases: 0-5 years and 6-20 years. The tasks to be accomplished during each phase are listed below.

Near-Term (0-5 Years)

- Shift and construct a 3,300-foot runway and install airport lighting
- Relocate aircraft parking apron and construct to 200 x 300 feet; construct connecting taxiway
- Relocate the valley trail at the north end to the trail relocation to allow runway lengthening
- Construct one single-bay Snow Removal Equipment Building
- Acquire about 80 acres that will be needed for the development
- The estimate of cost for the near-term development in 2010 dollars is \$24 million.

Ultimate (6-20 Years)

- Expand apron and lease area as demand warrants.
- Extend runway to 3,800 feet and resurface operational surfaces.
- The estimate of cost for the ultimate development in 2010 dollars is about \$5 million.

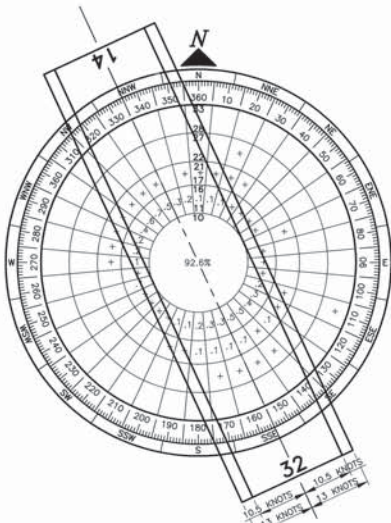
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 CHECKED BY: J. RICE
 DATE: 12/09/2010
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 SHEET: 1 OF 9

CROOKED CREEK AIRPORT



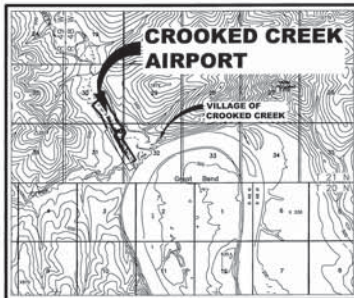
ALASKA CENTRAL REGION LOCATION MAP

NOT TO SCALE



WIND DATA TABLE	10.5 kt	13 kt	16 kt	20 kt
RUNWAY 14/32	99.13%	99.68%	99.95%	99.99%

DATA SOURCE: DRYDEN INSTRUMENTATION ANCHORAGE, ALASKA
 PERIOD: FEBRUARY 3, 2002 THRU MARCH 26, 2003 (9,377 OBSERVATIONS)



VICINITY MAP

1 0 1 2
MILES

T 21 N, R 48 W, SEC. 30, 31, 32
 SEWARD MERIDIAN
 U.S.G.S. SLEETMUTE (D-6), ALASKA



GEOGRAPHIC COORDINATES TABLE						
ITEM	EXISTING LATITUDE	EXISTING LONGITUDE	NEAR TERM LATITUDE	NEAR TERM LONGITUDE	ULTIMATE LATITUDE	ULTIMATE LONGITUDE
ARP	61°52'08"N	158°08'52"W	61°52'19"N	158°08'12"W	61°52'22"N	158°08'15"W
THRESHOLD RW 13	61°52'16.05"N	158°08'12.75"W	—	—	—	—
THRESHOLD RW 31	61°51'59.37"N	158°07'50.58"W	—	—	—	—
THRESHOLD RW 14	—	—	61°52'34.17"N	158°08'27.12"W	61°52'38.63"N	158°08'31.55"W
THRESHOLD RW 32	—	—	61°52'04.75"N	158°07'57.87"W	61°52'04.75"N	158°07'57.87"W

LEGEND			
ITEM	EXISTING	NEAR-TERM	ULTIMATE
AIRPORT REFERENCE POINT (A.R.P.)	▲	▲	▲
ANTENNA	⊙	⊙	⊙
BLUFF	▬	▬	▬
BUILDINGS	■	■	■
BUILDING RESTRICTION LINE	—	—	—
DEVELOPMENT	▬	▬	▬
FENCE	—x—x—	—x—x—	—x—x—
PAP	◆◆◆◆	◆◆◆◆	◆◆◆◆
PROPERTY LINE	—	—	—
REL	●	●	●
ROADWAYS	—	—	—
ROTATING BEACON	⊙	⊙	⊙
SHORELINE	—	—	—
SURVEY MONUMENT	⊙	⊙	⊙
THRESHOLD MARKERS/LIGHTS	⊙	⊙	⊙
TOPOGRAPHIC CONTOURS	—	—	—
TREE (LARGE SINGLE)	⊙	⊙	⊙
TREELINE	—	—	—
VASI	—	—	—
WIND CONE	⊙	⊙	⊙
WIND CONE AND SEGMENTED CIRCLE	⊙	⊙	⊙

AIRPORT DATA TABLE			
ITEM	EXISTING	NEAR-TERM	ULTIMATE
ICAO IDENTIFIER	NONE	NONE	NONE
NATIONAL AIRPORT IDENTIFIER	CRK	CRK	CRK
FAA SITE NUMBER	50132.1A	50132.1A	50132.1A
AIRPORT ELEVATION (NAVD88)	174.2	177.2	177.2
AIRPORT REFERENCE CODE	A	B II	B II
MEAN MAX. TEMPERATURE, HOTTEST MONTH	69.7°F, JULY	69.7°F, JULY	69.7°F, JULY
AIRPORT AND TERMINAL NAVIGATION AIDS	NONE	AWOS, GPS, ROTATING BEACON	AWOS, GPS, ROTATING BEACON
TAXIWAY LIGHTING/MARKING	NONE / NA	M.I. / EDGE	M.I. / EDGE
DISTRIBUTION SURVEY SOURCE & TYPE	NONE	NONE	NONE
MAGNETIC DECLINATION, YEAR, RATE OF CHANGE	—	16°07'E, 2009, 0'13" (W)/YEAR	—

RUNWAY 13/31 DATA TABLE			
ITEM	EXISTING	NEAR-TERM	ULTIMATE
RUNWAY TYPE	UTILITY OR OTHER THAN UTILITY	UTILITY	UTILITY
FAR PART 77 APPROACH CATEGORY (V, NPI, P)	V / V	V / V	V / V
APPROACH SURFACES	20:1 / 20:1	20:1 / 20:1	20:1 / 20:1
VISIBILITY MINIMUM	1 SM	1 SM	1 SM
RUNWAY SURFACE	GRAVEL	GRAVEL	GRAVEL
PAVEMENT STRENGTH SW,DW,DTW,DDTW x1000psi	N/A	N/A	N/A
AIRCRAFT APPROACH CATEGORY	A	B	B
AIRPLANE DESIGN GROUP	I	I	I
MEAN GEODETIC BEARING	N32°08'19"W	N32°08'19"W	N32°08'19"W
EFFECTIVE GRADE	0.75%	0.75%	0.75%
TOUCHDOWN ELEVATION (NAVD88)	174.2 / 174.2	174.2 / 174.2	174.2 / 174.2
RUNWAY DIMENSIONS	60' X 2000'	60' X 2000'	60' X 2000'
RUNWAY SAFETY AREA (RSA) DIMENSIONS	120 X 2480'	120 X 2480'	120 X 2480'
LENGTH BEYOND R/W END	240' / 240'	240' / 240'	240' / 240'
RUNWAY PROTECTION ZONE (RPZ) DIMENSIONS	250' X 400' X 1000'	250' X 400' X 1000'	250' X 400' X 1000'
RUNWAY OBJECT FREE AREA (OFA) DIMENSIONS	250 X 2480'	250 X 2480'	250 X 2480'
LENGTH BEYOND R/W END OR STOPWAY	240' / 240'	240' / 240'	240' / 240'
RUNWAY OBSTACLE FREE ZONE (OFZ) DIMENSIONS	120 X 2400'	120 X 2400'	120 X 2400'
RUNWAY LIGHTING	NONE	NONE	NONE
RUNWAY MARKING TYPE	NONE	NONE	NONE
RUNWAY VISUAL APPROACH AIDS	NONE	NONE	NONE

RUNWAY 14/32 DATA TABLE			
ITEM	EXISTING	NEAR-TERM	ULTIMATE
RUNWAY TYPE	UTILITY OR OTHER THAN UTILITY	UTILITY	UTILITY
FAR PART 77 APPROACH CATEGORY (V, NPI, P)	NPI / NPI	NPI / NPI	NPI / NPI
APPROACH SURFACES	20:1 / 20:1	20:1 / 20:1	20:1 / 20:1
VISIBILITY MINIMUM	1 SM / 1 SM	1 SM / 1 SM	1 SM / 1 SM
RUNWAY SURFACE	GRAVEL	GRAVEL	GRAVEL
PAVEMENT STRENGTH SW,DW,DTW,DDTW x1000psi	N/A	N/A	N/A
AIRCRAFT APPROACH CATEGORY	A	B	B
AIRPLANE DESIGN GROUP	I	I	I
MEAN GEODETIC BEARING	N25°08'28"W	N25°08'28"W	N25°08'28"W
EFFECTIVE GRADE	0.40%	0.34%	0.34%
TOUCHDOWN ELEVATION (NAVD88)	176.5 / 177.2	176.5 / 177.2	176.5 / 177.2
RUNWAY DIMENSIONS	75' X 3300'	75' X 3800'	75' X 3800'
RUNWAY SAFETY AREA (RSA) DIMENSIONS	150' X 3900'	150' X 4400'	150' X 4400'
LENGTH BEYOND R/W END	300' / 300'	300' / 300'	300' / 300'
RUNWAY PROTECTION ZONE (RPZ) DIMENSIONS	500' X 700' X 1000'	500' X 700' X 1000'	500' X 700' X 1000'
RUNWAY OBJECT FREE AREA (OFA) DIMENSIONS	500 X 3900'	500 X 4400'	500 X 4400'
LENGTH BEYOND R/W END OR STOPWAY	300' / 300'	300' / 300'	300' / 300'
RUNWAY OBSTACLE FREE ZONE (OFZ) DIMENSIONS	250 X 3700'	250 X 4200'	250 X 4200'
RUNWAY LIGHTING	MIRL	MIRL	MIRL
RUNWAY MARKING TYPE	NONE	NONE	NONE
RUNWAY VISUAL APPROACH AIDS	PAP, REL	PAP, REL	PAP, REL

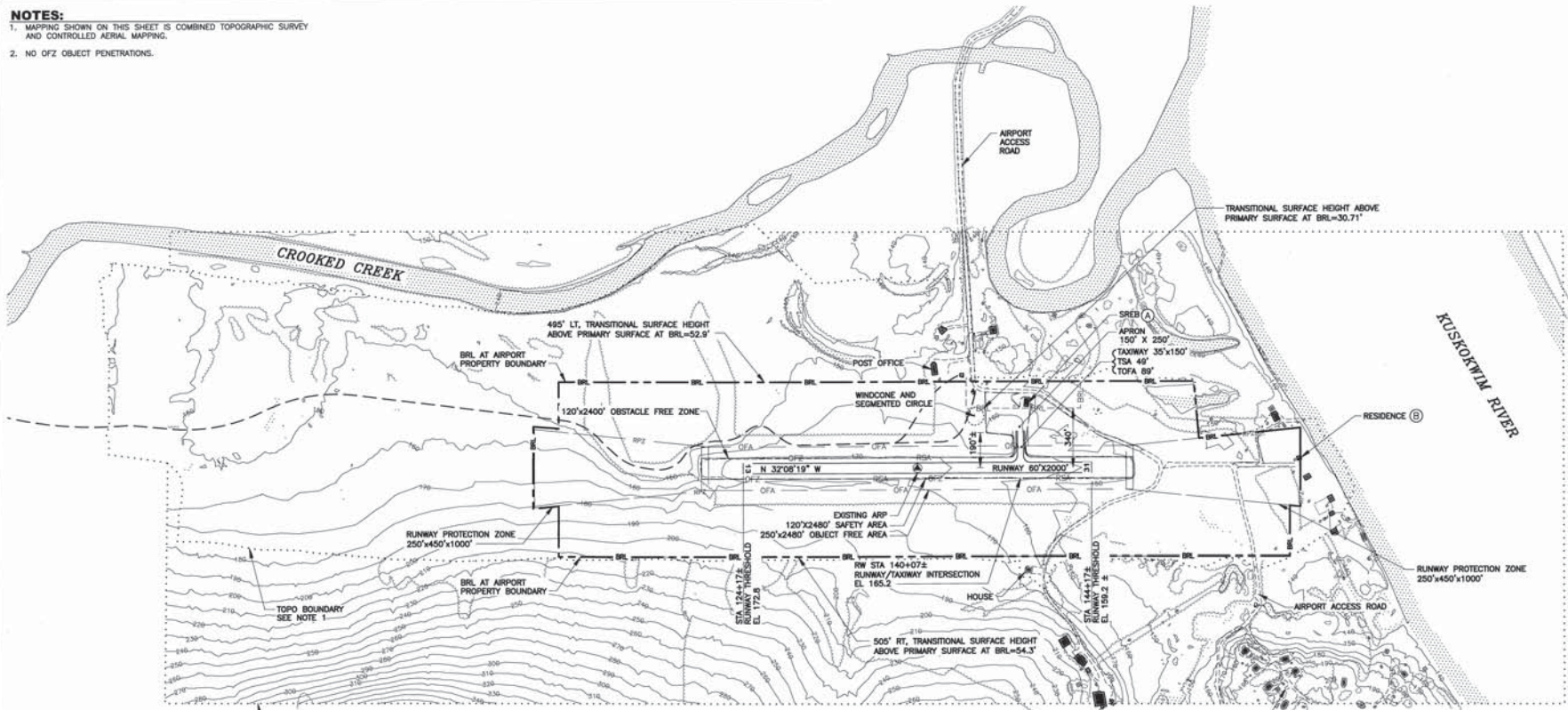
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1	DATA
2	EXISTING LAYOUT
3	NEAR-TERM LAYOUT
4	ULTIMATE LAYOUT
5	EXISTING INNER PORTION OF THE APPROACH SURFACE
6	NEAR-TERM INNER PORTION OF THE APPROACH SURFACE
7	ULTIMATE INNER PORTION OF THE APPROACH SURFACE
8	AIRPORT AIRSPACE, 14 CFR, PART 77
9	AIRPORT PROPERTY MAP

BY	DATE	REVISION
APPROVED: <i>[Signature]</i>	DATE: 12-13-2010	
RECOMMENDED: <i>[Signature]</i>	DATE: 12-18-2010	
HARVEY M. DUBOY, P.E.	DESIGN SECTION CHIEF	

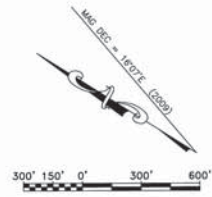
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES CENTRAL REGION	
CROOKED CREEK AIRPORT	DATE: 12/09/2010
ALP APPROVAL LETTER DATED 6/9/06	SHEET: 1 OF 9
FAA AIRSPACE REVIEW NUMBER 05-AAL-27-2010	
DATE: 1/20/11	

NOTES:

- MAPPING SHOWN ON THIS SHEET IS COMBINED TOPOGRAPHIC SURVEY AND CONTROLLED AERIAL MAPPING.
- NO OFZ OBJECT PENETRATIONS.



BUILDING DATA TABLE				
BUILDING ID #	DESCRIPTION	STA/OFFSET	TOP ELEV (MSL)	OBSTRUCTION MARKING
⊙	SREB	140+41.75/251.04' LT	179.51'	NONE
⊙	RESIDENCE	155+29.17/22.84' LT	168.89'	NONE



BY	DATE	REVISION

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

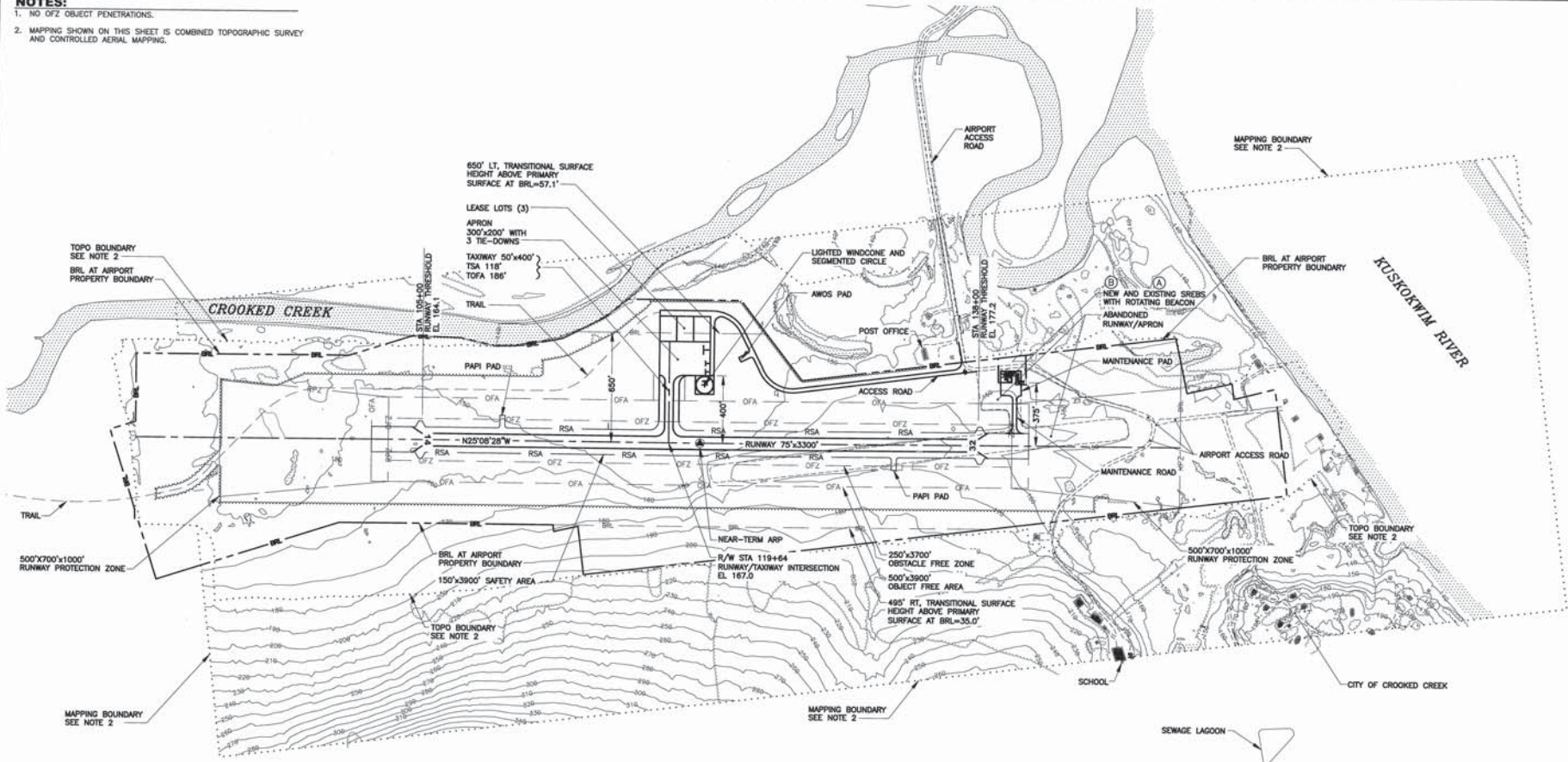
CROOKED CREEK AIRPORT
CROOKED CREEK, ALASKA
AIRPORT LAYOUT PLAN
EXISTING LAYOUT

DATE: 12/09/2010
SHEET: 2 OF 9

DRAWN BY: J. J. JENSEN
 CHECKED BY: J. J. JENSEN
 DATE: 12/09/2010 2:28 PM
 PROJECT: CROOKED CREEK AIRPORT LAYOUT PLAN
 SHEET: 2 OF 9
 SCALE: AS SHOWN
 DRAWING NO.: 10000000000000000000

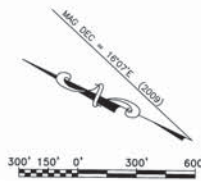
NOTES:

1. NO OFZ OBJECT PENETRATIONS.
2. MAPPING SHOWN ON THIS SHEET IS COMBINED TOPOGRAPHIC SURVEY AND CONTROLLED AERIAL MAPPING.



BUILDING DATA TABLE

BUILDING ID #	DESCRIPTION	SIA/OFFSET	TOP ELEV (MSL)	OBSTRUCTION MARKING
01	SHEB. EXISTING	140+28.54/388.97' LT	179.51'	NONE
02	SHEB. NEW	139+86.71/380' LT	184.00'	NOAR



BY	DATE	REVISION

**STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION**

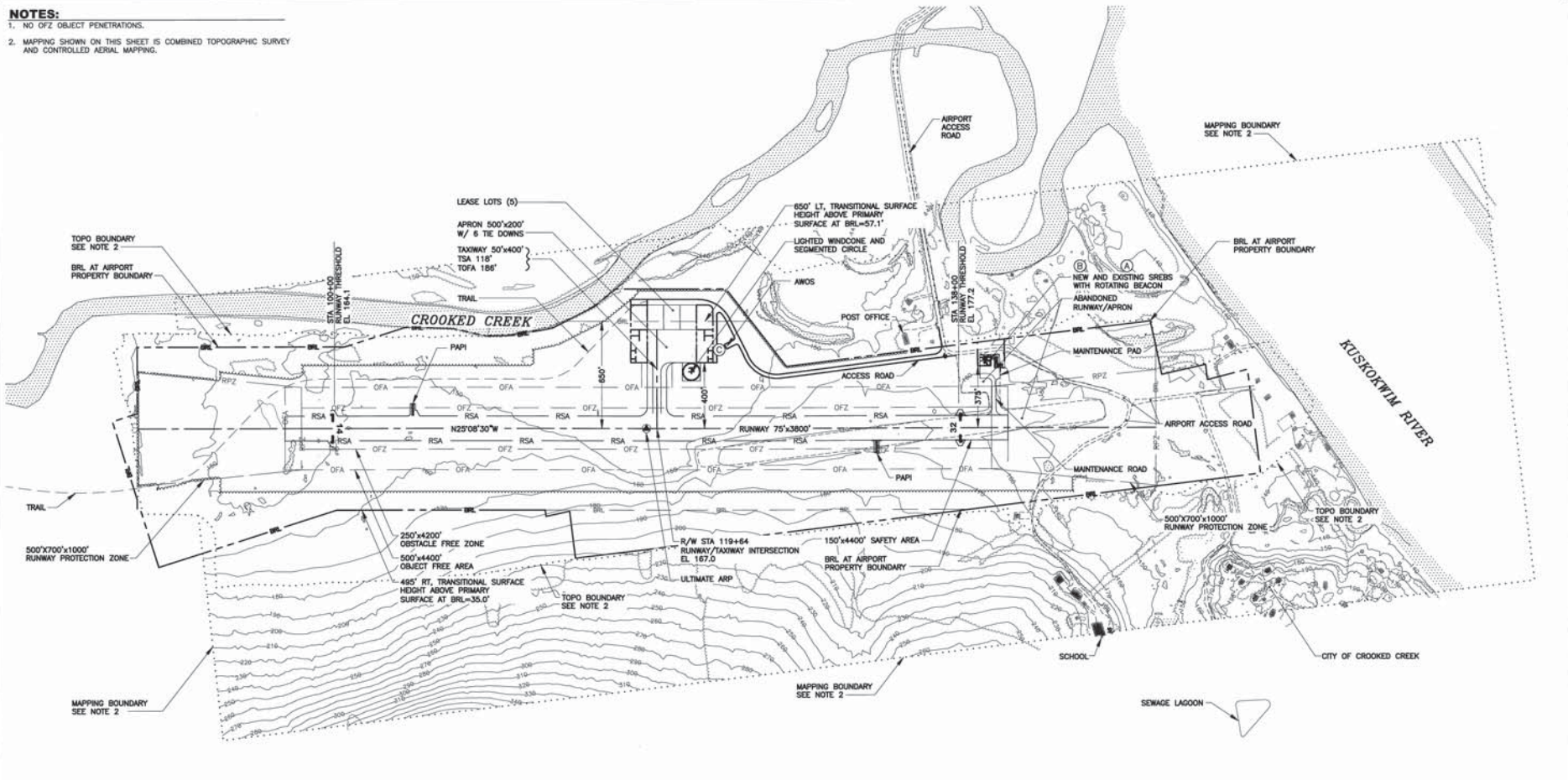
CROOKED CREEK AIRPORT
CROOKED CREEK, ALASKA
AIRPORT LAYOUT PLAN
NEAR-TERM LAYOUT

DATE: 12/09/2010
SHEET: 3 of 9

12/09/2010 2:37 PM
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 Plot Scale: 1"=300'

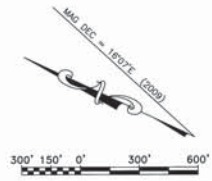
NOTES:

1. NO OFZ OBJECT PENETRATIONS.
2. MAPPING SHOWN ON THIS SHEET IS COMBINED TOPOGRAPHIC SURVEY AND CONTROLLED AERIAL MAPPING.



BUILDING DATA TABLE

BUILDING ID #	DESCRIPTION	STA/OFFSET	TOP ELEV (MSL)	OBSTRUCTION MARKING
01	SREBS EXISTING	140+28.54/188.27 LT	179.51	NONE
02	SREBS NEW	139+86.77/350 LT	184.00	NONE
03	AWOS	123+91.41/500.80 LT	188.35	NONE



BY	DATE	REVISION

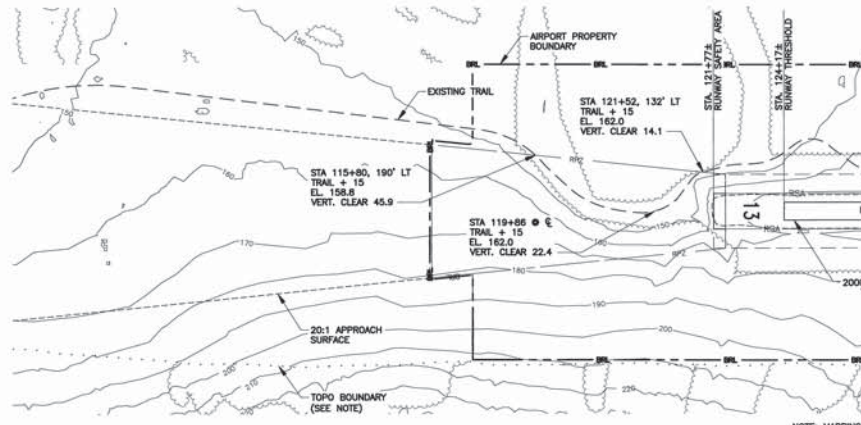
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

CROOKED CREEK AIRPORT
CROOKED CREEK, ALASKA
AIRPORT LAYOUT PLAN
ULTIMATE LAYOUT

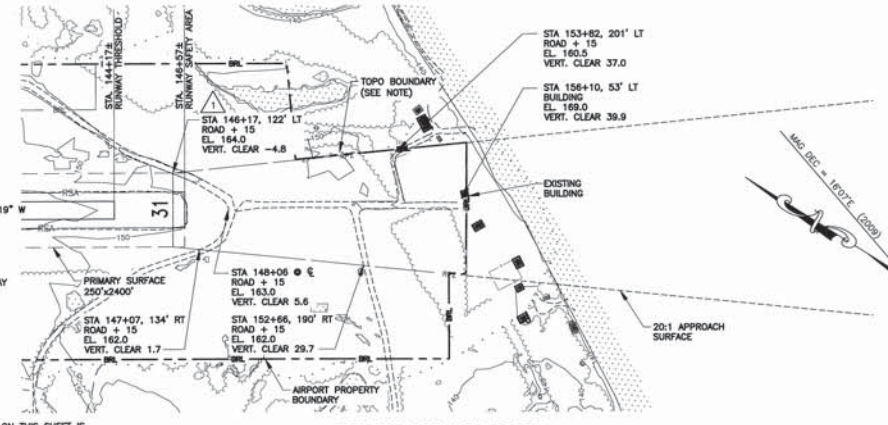
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SHEET: 4 of 9

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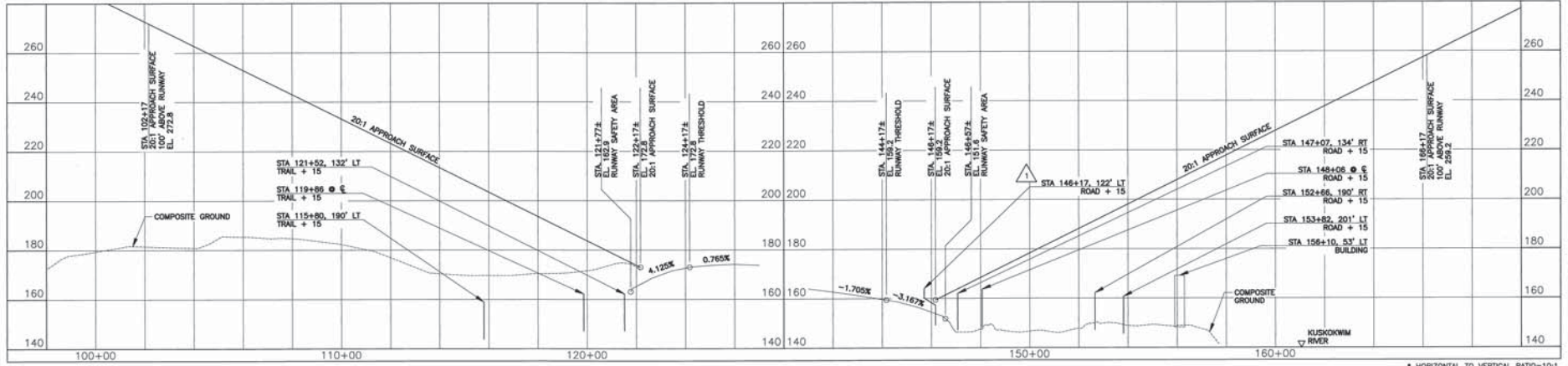


RUNWAY 13 PLAN



RUNWAY 31 PLAN

NOTE: MAPPING SHOWN ON THIS SHEET IS COMBINED TOPOGRAPHIC SURVEY AND CONTROLLED AERIAL MAPPING.



RUNWAY 13 PROFILE

RUNWAY 31 PROFILE

* HORIZONTAL TO VERTICAL RATIO=10:1

F.A.R. PART 77 SURFACE OBSTRUCTION TABLE (INNER PORTION RW 13)								
ID #	DESCRIPTION	STA/OFFSET	ELEVATION (MSL)	SURFACE PENETRATED	SURFACE ELEVATION	AMOUNT OF PENETRATION	DISPOSITION	STAGE TO CORRECT
	NONE							

F.A.R. PART 77 SURFACE OBSTRUCTION TABLE (INNER PORTION RW 31)								
ID #	DESCRIPTION	STA/OFFSET	ELEVATION (MSL)	SURFACE PENETRATED	SURFACE ELEVATION	AMOUNT OF PENETRATION	DISPOSITION	STAGE TO CORRECT
△	ROAD + 15	146+17 / 122.55 LT	164.0'	APPROACH	159.2'	4.8'	TO REMAIN	NEAR-TERM

- NOTES:**
- SEE SHEET 8 FOR F.A.R. PART 77 OBSTRUCTION TABLE (OUTER PORTION).
 - THERE ARE NO OBJECT PENETRATIONS IN THE RUNWAY APPROACH END SITING SURFACE OF RUNWAY 13, AS DEFINED IN FAA AC 150/5300-13, CHANGE 14, APPENDIX 2, TABLE A2-1, LINE 2.
 - THE CONTROLLING OBSTRUCTION FOR RUNWAY 13 ARE 30' TREES (ASSUMED) LOCATION ALONG THE WESTERN BOUNDARY OF THE APPROACH SURFACE. THE OBSTRUCTION CLEARANCE SLOPE IS ESTABLISHED AS 28:1 PER FAA AC 150/5300-35, SECTION 4, DATA ELEMENT NUMBER 97.

- NOTES:**
- SEE SHEET 8 FOR F.A.R. PART 77 OBSTRUCTION TABLE (OUTER PORTION).
 - SEE SURFACE OBSTRUCTION TABLE FOR SURFACE OBJECT PENETRATIONS TO THRESHOLD SITING SURFACE, AS DEFINED IN FAA AC 150/5300-13, CHANGE 14, APPENDIX 2, TABLE A2-1, LINE 2.
 - THE CONTROLLING OBSTRUCTION FOR RUNWAY 31 IS THE ROAD CROSSING AT STA 146+17, 122.55 LT, ELEVATION INCLUDING 15' VEHICLE IS 164.0'. THE OBSTRUCTION IS LOCATED AT THE BEGINNING OF THE APPROACH SURFACE, THEREFORE NO OBSTRUCTION CLEARANCE SLOPE CAN BE ESTABLISHED.

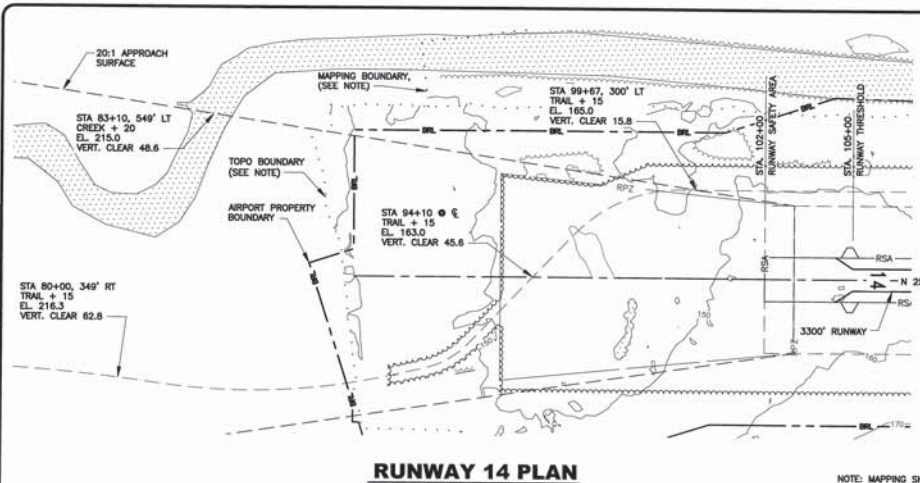
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 CENTRAL REGION

CROOKED CREEK AIRPORT
 CROOKED CREEK, ALASKA
 AIRPORT LAYOUT PLAN
 EXISTING INNER PORTION OF THE APPROACH SURFACE

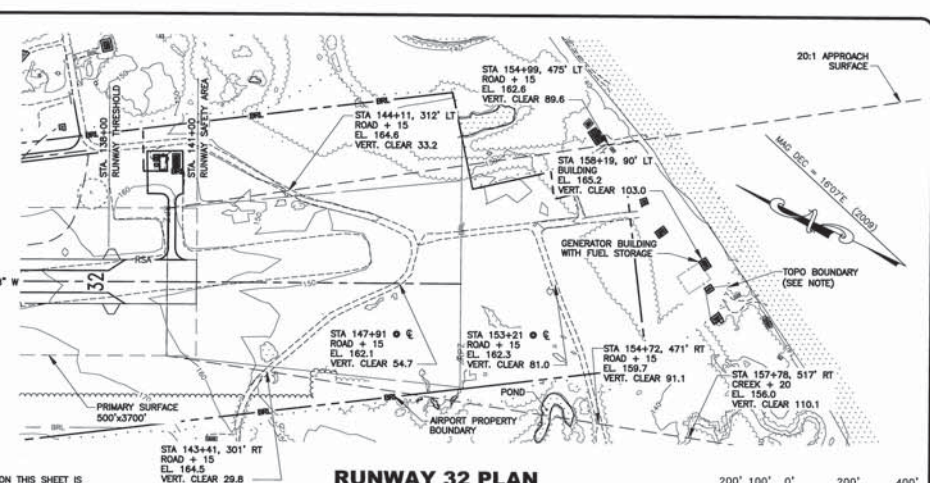
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 SHEET: 5 OF 9

BY	DATE	REVISION

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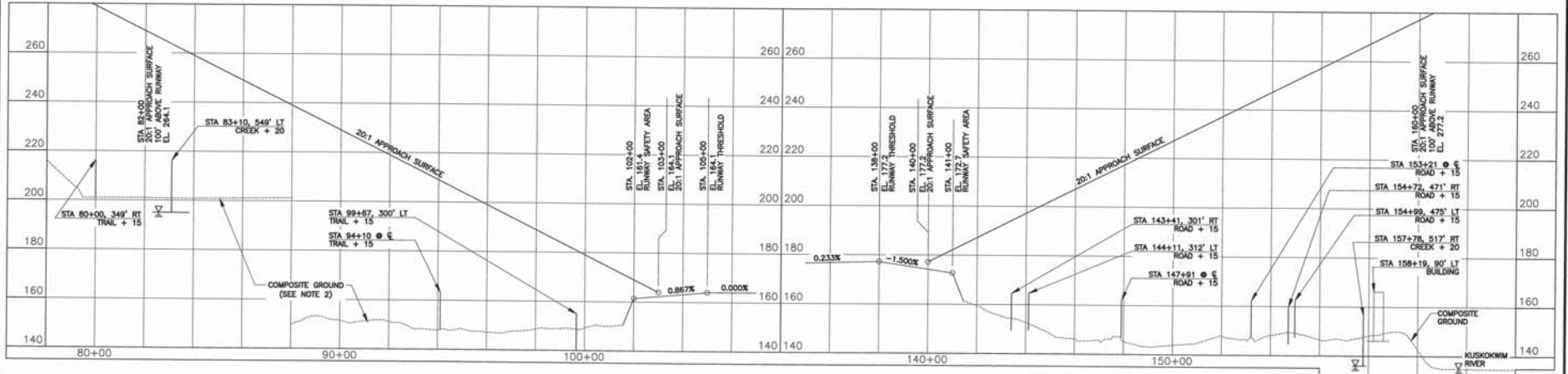


RUNWAY 14 PLAN



RUNWAY 32 PLAN

NOTE: MAPPING SHOWN ON THIS SHEET IS COMBINED TOPOGRAPHIC SURVEY AND CONTROLLED AERIAL MAPPING.



RUNWAY 14 PROFILE

RUNWAY 32 PROFILE

* HORIZONTAL TO VERTICAL RATIO=10:1

F.A.R. PART 77 SURFACE OBSTRUCTION TABLE (INNER PORTION RW 14)								
ID #	DESCRIPTION	STA/OFFSET	ELEVATION (MSL)	SURFACE PENETRATED	SURFACE ELEVATION	AMOUNT OF PENETRATION	DISPOSITION	STAGE TO CORRECT
	NONE							

F.A.R. PART 77 SURFACE OBSTRUCTION TABLE (INNER PORTION RW 32)								
ID #	DESCRIPTION	STA/OFFSET	ELEVATION (MSL)	SURFACE PENETRATED	SURFACE ELEVATION	AMOUNT OF PENETRATION	DISPOSITION	STAGE TO CORRECT
	NONE							

- NOTES:**
- SEE SHEET 8 FOR F.A.R. PART 77 OBSTRUCTION TABLE (OUTER PORTION).
 - THE USGS QUAD MAPS ARE 30' TO 60' HIGHER IN ELEVATION THAN TOPO SURVEY/CONTROLLED MAPPING. TRAIL FOLLOWS VALLEY FLOOR, ELEVATION APPROXIMATED.
 - THERE ARE NO OBJECT PENETRATIONS IN THE RUNWAY APPROACH END SITING SURFACE, AS DEFINED IN FAA AC 150/5300-13, CHANGE 14, APPENDIX 2, TABLE A2-1, LINE 3.
 - THE CONTROLLING OBSTRUCTION FOR RUNWAY 14 ARE 30' TREES (ASSUMED) LOCATION ALONG THE WESTERN BOUNDARY OF THE APPROACH SURFACE. THE OBSTRUCTION CLEARANCE SLOPE IS ESTABLISHED AS 31:1 PER FAA AC 150/5200-35, SECTION 4, DATA ELEMENT NUMBER 57.

- NOTES:**
- SEE SHEET 8 FOR F.A.R. PART 77 OBSTRUCTION TABLE (OUTER PORTION).
 - THERE ARE NO OBJECT PENETRATIONS IN THE RUNWAY APPROACH END SITING SURFACE, AS DEFINED IN FAA AC 150/5300-13, CHANGE 14, APPENDIX 2, TABLE A2-1, LINE 3.
 - THERE ARE NO CONTROLLING OBSTRUCTIONS FOR RUNWAY 32, THEREFORE THE CONTROLLING OBSTRUCTION CLEARANCE SLOPE IS ESTABLISHED AS 50:1 PER FAA AC 150/5200-35, SECTION 4, DATA ELEMENT NUMBER 57.

**STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION**

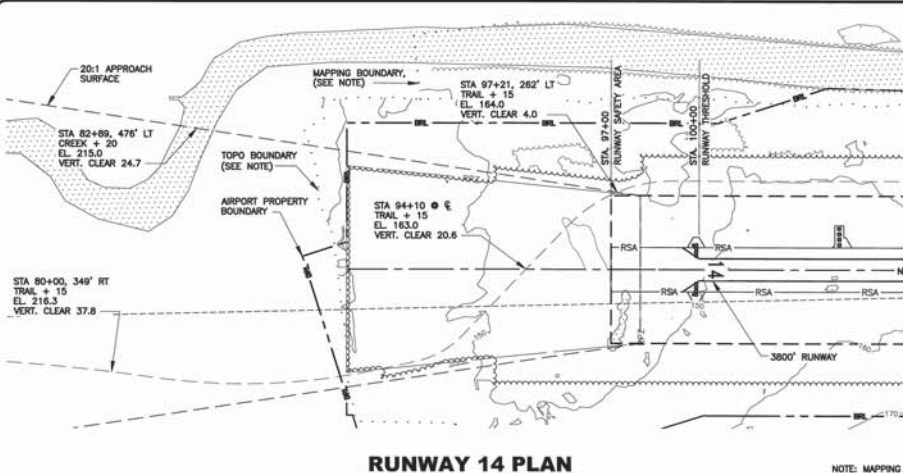
CROOKED CREEK AIRPORT
CROOKED CREEK, ALASKA
AIRPORT LAYOUT PLAN

NEAR-TERM INNER PORTION OF THE APPROACH SURFACE

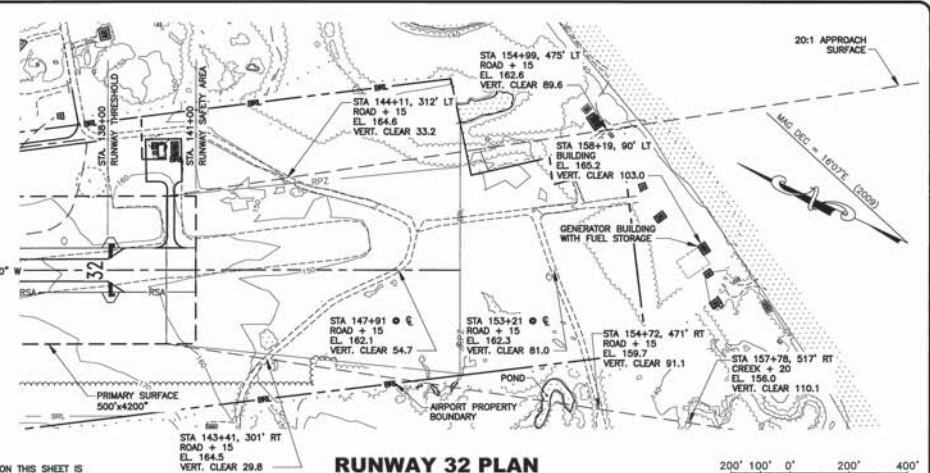
DATE: 12/09/2010
SHEET: 6 OF 9

BY	DATE	REVISION

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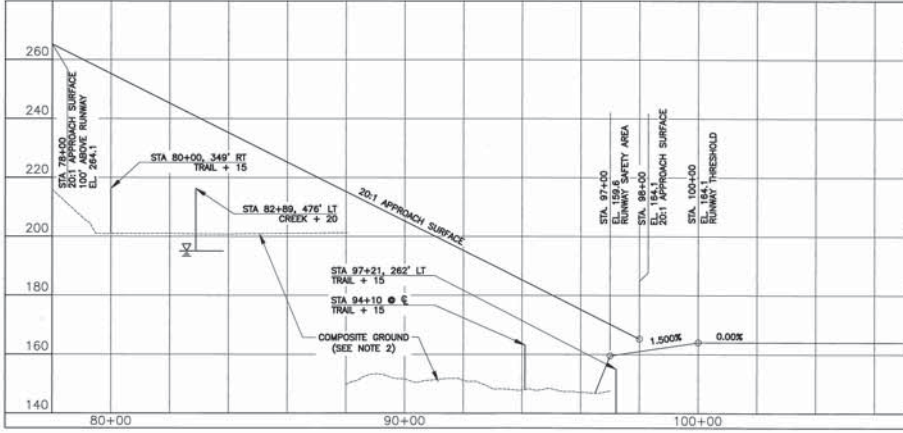


RUNWAY 14 PLAN

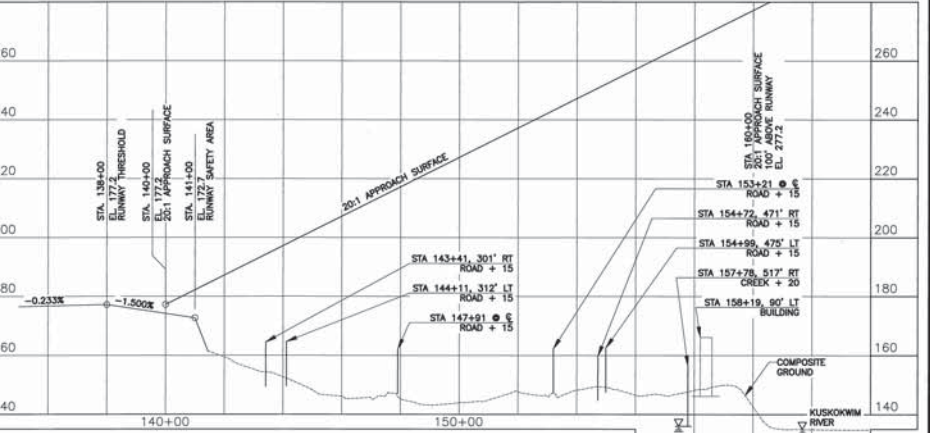


RUNWAY 32 PLAN

NOTE: MAPPING SHOWN ON THIS SHEET IS COMBINED TOPOGRAPHIC SURVEY AND CONTROLLED AERIAL MAPPING.



RUNWAY 14 PROFILE



RUNWAY 32 PROFILE

* HORIZONTAL TO VERTICAL RATIO=10:1

F.A.R. PART 77 SURFACE OBSTRUCTION TABLE (INNER PORTION RW 14)

ID #	DESCRIPTION	STA/OFFSET	ELEVATION (MSL)	SURFACE PENETRATED	SURFACE ELEVATION	AMOUNT OF PENETRATION	DISPOSITION	STAGE TO CORRECT
	NONE							

F.A.R. PART 77 SURFACE OBSTRUCTION TABLE (INNER PORTION RW 32)

ID #	DESCRIPTION	STA/OFFSET	ELEVATION (MSL)	SURFACE PENETRATED	SURFACE ELEVATION	AMOUNT OF PENETRATION	DISPOSITION	STAGE TO CORRECT
	NONE							

- NOTES:**
- SEE SHEET 8 FOR F.A.R. PART 77 OBSTRUCTION TABLE (OUTER PORTION).
 - THE USGS QUAD MAPS ARE 30' TO 60' HIGHER IN ELEVATION THAN TOPO SURVEY/CONTROLLED MAPPING. TRAIL FOLLOWS VALLEY FLOOR, ELEVATION APPROXIMATED.
 - THERE ARE NO OBJECT PENETRATIONS IN THE RUNWAY APPROACH END SITING SURFACE, AS DEFINED IN FAA AC 150/5300-13, CHANGE 14, APPENDIX 2, TABLE A2-1, LINE 3.
 - THE CONTROLLING OBSTRUCTION FOR RUNWAY 14 ARE 30' TREES (ASSUMED) LOCATION ALONG THE WESTERN BOUNDARY OF THE APPROACH SURFACE. THE OBSTRUCTION CLEARANCE SLOPE IS ESTABLISHED AS 28:1 PER FAA AC 150/5200-35, SECTION 4, DATA ELEMENT NUMBER 57.

- NOTES:**
- SEE SHEET 8 FOR F.A.R. PART 77 OBSTRUCTION TABLE (OUTER PORTION).
 - THERE ARE NO OBJECT PENETRATIONS IN THE RUNWAY APPROACH END SITING SURFACE, AS DEFINED IN FAA AC 150/5300-13, CHANGE 14, APPENDIX 2, TABLE A2-1, LINE 3.
 - THERE ARE NO CONTROLLING OBSTRUCTIONS FOR RUNWAY 32, THEREFORE THE CONTROLLING OBSTRUCTION CLEARANCE SLOPE IS ESTABLISHED AS 50:1 PER FAA AC 150/5200-35, SECTION 4, DATA ELEMENT NUMBER 57.

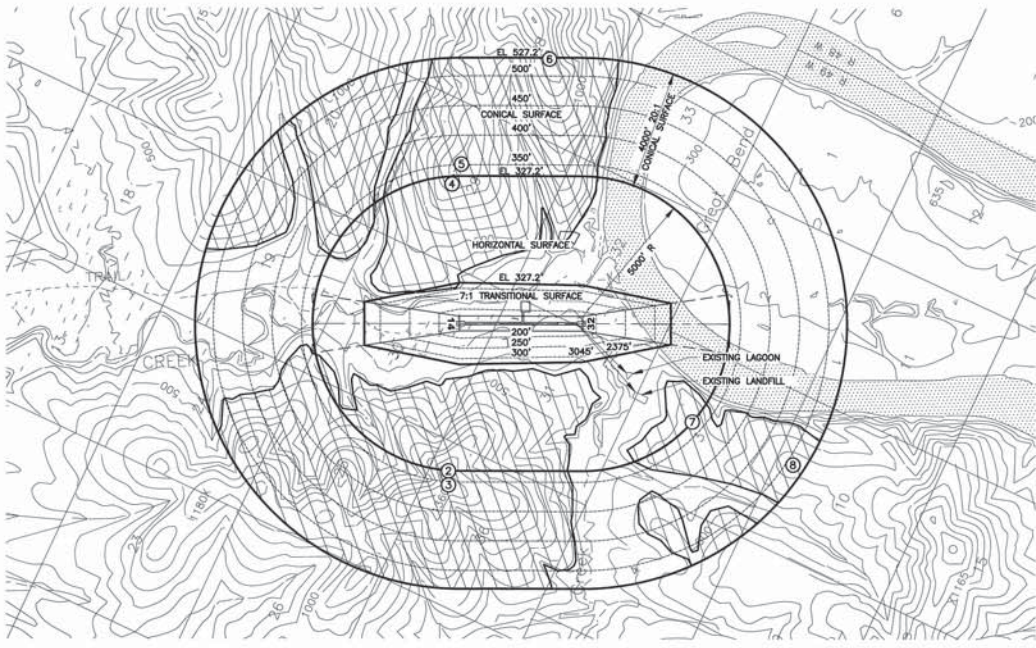
STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 CENTRAL REGION

CROOKED CREEK AIRPORT
 CROOKED CREEK, ALASKA
 AIRPORT LAYOUT PLAN
 ULTIMATE INNER PORTION OF THE APPROACH SURFACE

DATE: 12/09/2010
 SHEET: 7
 OF 9

BY	DATE	REVISION

Date Plotted: 12/09/2010, 2:28 PM
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 Plot Path: C:\Users\j...
 Plot File: C:\Users\j...



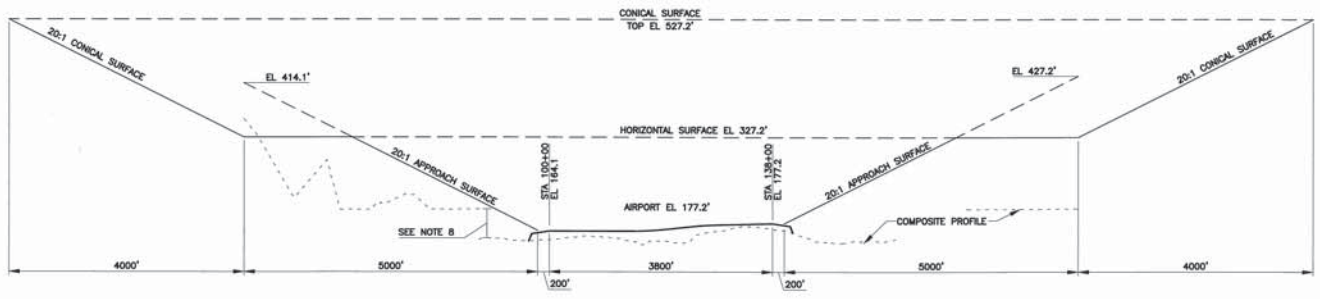
F.A.R. PART 77 SURFACE OBSTRUCTION TABLE (OUTER PORTION)

ID #	DESCRIPTION	STA/OFFSET	ELEVATION	SURFACE PENETRATED	SURFACE ELEVATION	AMOUNT OF PENETRATION	DISPOSITION	STAGE TO CORRECT
• ②	TERRAIN PENETRATION	94+33	1300	HORIZONTAL	328	972	TO REMAIN	N/A
• ③	TERRAIN PENETRATION	94+33 4998 RT	1360	CONICAL	350	1010	TO REMAIN	N/A
• ④	TERRAIN PENETRATION	94+33 5473 RT	1100	HORIZONTAL	328	772	TO REMAIN	N/A
• ⑤	TERRAIN PENETRATION	95+40 4735 LT	1187	CONICAL	350	837	TO REMAIN	N/A
• ⑥	TERRAIN PENETRATION	98+61 5410 LT	1500	CONICAL	528	972	TO REMAIN	N/A
• ⑦	TERRAIN PENETRATION	128+62 8956 LT	450	HORIZONTAL	328	122	TO REMAIN	N/A
• ⑧	TERRAIN PENETRATION	177+37 3322 RT	750	CONICAL	512	238	TO REMAIN	N/A
• ⑧	TERRAIN PENETRATION	211+68 4770 RT						

* HIGHEST FEATURE IN LARGE AREA OF TERRAIN PENETRATION. REFER TO HATCHED AREAS ON MAP.

NOTES:

- AIRPORT ELEVATION IS 177.2' (NAVD 88).
- APPROACH SURFACES ARE 20:1 BEGINNING 200' BEYOND THE THRESHOLD.
- BASE MAP DATA FROM USGS QUAD, SEWARD MERIDIAN, SLEETMUTE D-6, ALASKA.
- REFER TO THE INNER PORTION OF THE APPROACH SURFACE DRAWINGS FOR CLOSE-IN OBSTRUCTIONS.
- PRIMARY SURFACE WIDTH IS 500'.
- THERE ARE NO KNOWN ORDINANCE OR STATUTE HEIGHT RESTRICTIONS.
- RUNWAY THRESHOLD 14: EL 164.1
RUNWAY THRESHOLD 32: EL 177.2
- MAPPING SHOWN ON THIS SHEET IS THE USGS QUAD MAPS. THERE APPEARS TO BE A 30' TO 40' DISCREPANCY BETWEEN THE USGS QUAD MAP (BASED ON NAVD 29) AND THE PROJECT AERIAL MAPPING (NAVD 88). THE HORIZONTAL SURFACE PENETRATIONS WERE DETERMINED FROM BOTH THE CONTROLLED AERIAL MAPPING (2' CONTOUR INTERVAL) AND THE USGS QUAD MAPS (100' CONTOUR INTERVALS). THE REMAINDER OF THE PENETRATIONS WERE ESTABLISHED FROM JUST THE USGS QUAD MAPS.



RUNWAY PROFILE



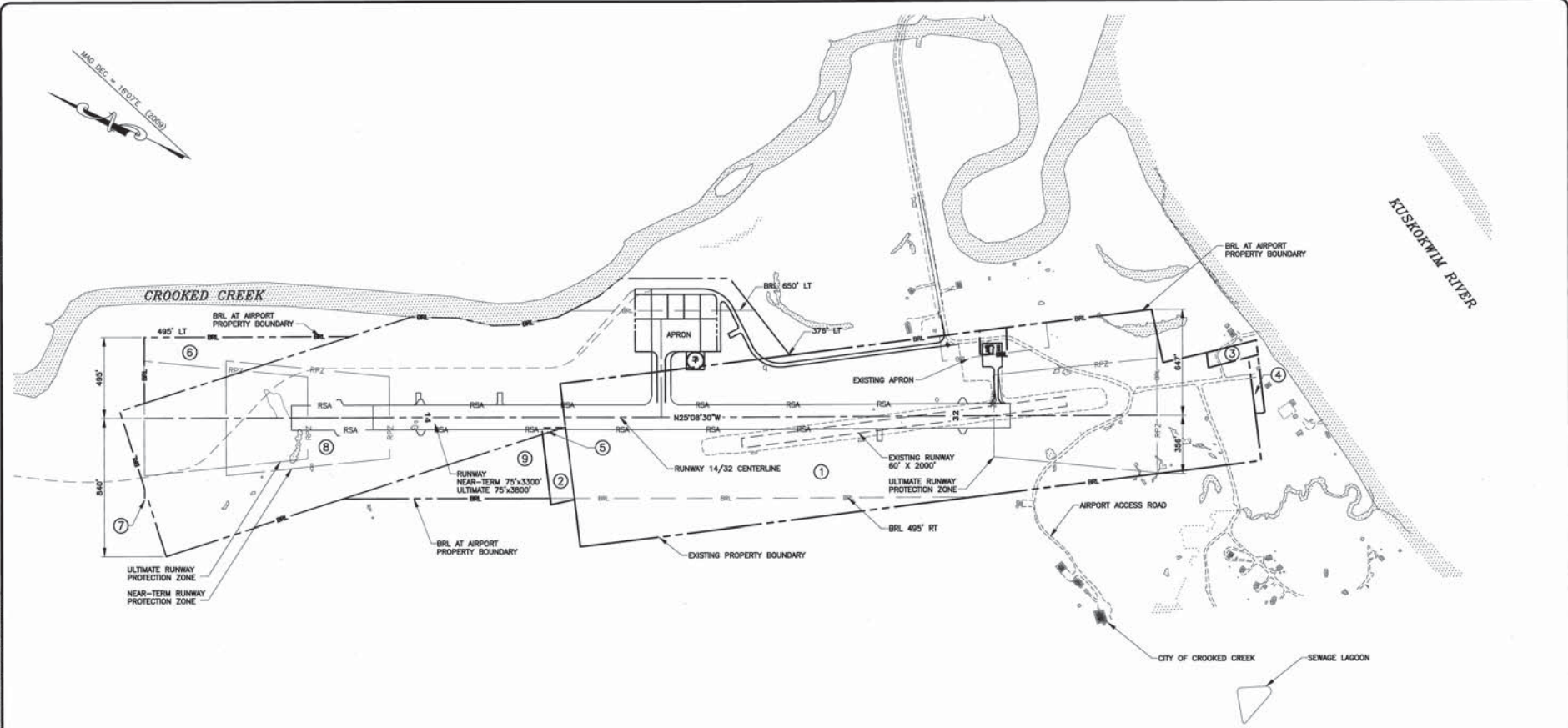
BY	DATE	REVISION

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
 CENTRAL REGION

CROOKED CREEK AIRPORT
 CROOKED CREEK, ALASKA
 AIRPORT LAYOUT PLAN
 AIRPORT AIRSPACE, 14 CFR, PART 77

DATE: 12/09/2010
 SHEET: 8 OF 9

Date Plotted: 12/09/2010, 2:57 PM
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 Plot: C:\Users\Administrator\Desktop\AIP\AIP_1000.dwg
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PROPERTY STATUS

ID #	INTEREST	GRANTOR	GRANTEE	PARCEL AREA	DATE ACQUIRED	RECORDED DOC. NO.	ACQUIRED AIP. NO.
1	FEE SIMPLE TO SURFACE & SUBSURFACE ESTATE	THE KUSKOKWIM CORP. (SURFACE) / CALISTA CORP. (SUBSURFACE)	STATE OF ALASKA, DOT&PF	92.17± AC	10/16/90	BOOK 23, PAGE 160	3-02-0073-01
2	FEE SIMPLE TO SURFACE & SUBSURFACE ESTATE	THE KUSKOKWIM CORP. (SURFACE) / CALISTA CORP. (SUBSURFACE)	STATE OF ALASKA, DOT&PF	1.47± AC	10/16/90	BOOK 23, PAGE 160	3-02-0073-01
3	AVIGATION & HAZARD EASEMENT	EVAN WASKY BY THE BIA	STATE OF ALASKA, DOT&PF	0.73 AC	01/03/92	BOOK 23, PAGE 916	3-02-0073-01
4	AVIGATION & HAZARD EASEMENT	JOHNNY JOHN BY THE BIA	STATE OF ALASKA, DOT&PF	0.47 AC	01/03/92	BOOK 23, PAGE 910	3-02-0073-01
5	AVIGATION & HAZARD EASEMENT	JOHNNY JOHN BY THE BIA	STATE OF ALASKA, DOT&PF	1.06 AC	01/03/92	BOOK 23, PAGE 905	3-02-0073-01
6	FEE SIMPLE TO SURFACE & SUBSURFACE ESTATE	THE KUSKOKWIM CORPORATION / CALISTA	STATE OF ALASKA, DOT&PF (PENDING)	5.84 AC	TO BE ACQUIRED	PENDING	PENDING
7	FEE SIMPLE TO SURFACE & SUBSURFACE ESTATE	THE KUSKOKWIM CORPORATION / CALISTA	STATE OF ALASKA, DOT&PF (PENDING)	0.02 AC	TO BE ACQUIRED	PENDING	PENDING
8	FEE SIMPLE TO SURFACE & SUBSURFACE ESTATE	THE KUSKOKWIM CORPORATION / CALISTA *	STATE OF ALASKA, DOT&PF (PENDING)	68.6 AC	TO BE ACQUIRED	PENDING	PENDING
9	FEE SIMPLE TO SURFACE & SUBSURFACE ESTATE	THE KUSKOKWIM CORPORATION / CALISTA	STATE OF ALASKA, DOT&PF (PENDING)	5.69 AC	TO BE ACQUIRED	PENDING	PENDING

* A LAND EXCHANGE IS BEING EXECUTED TO TRANSFER NATIVE ALLOTMENT PROPERTY TO THE KUSKOKWIM CORPORATION.



BY	DATE	REVISION

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

CROOKED CREEK AIRPORT
 CROOKED CREEK, ALASKA
 AIRPORT LAYOUT PLAN
 AIRPORT PROPERTY MAP

DATE: 12/09/2010
 SHEET: 9 OF 9