

NOTES

- The information hereon is based on a field survey performed by McClintock Land Associates, Inc. in September of 2004. Topcon Legacy receivers with PGA-1 antennas and Hiper+ receivers, both dual frequency receivers, were utilized in a combination of real time kinematic and static procedures. Topcon FC100 data collectors were utilized.
- All units are in U.S. Survey Feet, NAD83 (CORS96), State Plane Coordinate System Zone 5008 (AK-8).
- Bearings, distances and coordinates are grid based upon Alaska State Plane (NAD83, Zone 8) at point 602.
- Points 602 and 780 were tied by USKH as reported in June, 2004 with values obtained using the On-Line Positioning User Service of the NGS. Those values are 2173898.95N, 2001306.93E, Orthometric Ht = -7.56 US Ft for 602 and 2170452.66N, 2002042.52E, Orthometric Ht = +0.26 US Ft for 780. These two points were held for horizontal and vertical during processing. The vertical value shown below for point 780 is the result of differential levelling.
- Two stainless steel rods were driven to 40' or refusal for primary horizontal and vertical control, GPS-1 and GPS-2. These rods have Alaska DOT brass caps and are protected by 6" PVC pipe with covers. Normally these rods have short dimple sections projecting above the caps, however these were not available and were not installed. Horizontal position is the center of the hole in the cap and vertical is the top of the cap.
- Two or three 6+ hour static sessions were observed at the points set in note 5 and the two USKH points 602 and 780. These observations were reduced and submitted to OPUS with the meaned results compared to the processed results. Differences were negligible.
- 2 1/2" Aluminum post monuments with 3 1/4" Aluminum caps were set as random RMs to the drive rod monuments set in note 5. These points were tied as part of our GPS network and have differential level values for elevation. These posts were set for QC on the drive rods and should be treated equally if the drive rod monuments appear to be disturbed.
- All GPS observations, static and RTK, were obtained using the GEOD99 model.
- Kipnuk Airport was originally a metric project. Stationing ran from north to south with the south end of the runway shown as Sta 1+335 (metric). This point was calculated as station 20+00 (imperial), with stationing ascending to the north. The found centerline monument at 780 becomes station 17+86.76 and at 709 becomes station 52+31.74.
- See Sheet 2 for monument descriptions, coordinates, and transformation parameters for converting State Plane Coordinates to Local.
- See Sheet 2 for centerline hub elevations and bore hole locations.

LEGEND

- AIRPORT BOUNDARY, Approximate Location
- NEW RUNWAY CENTERLINE
- PRIMARY CENTERLINE MONUMENT
- SECONDARY CENTERLINE MONUMENT
- PRIMARY GPS CONTROL POINT
- SECONDARY GPS CONTROL POINT
- SEE SHEET 2 FOR MONUMENT DESCRIPTIONS

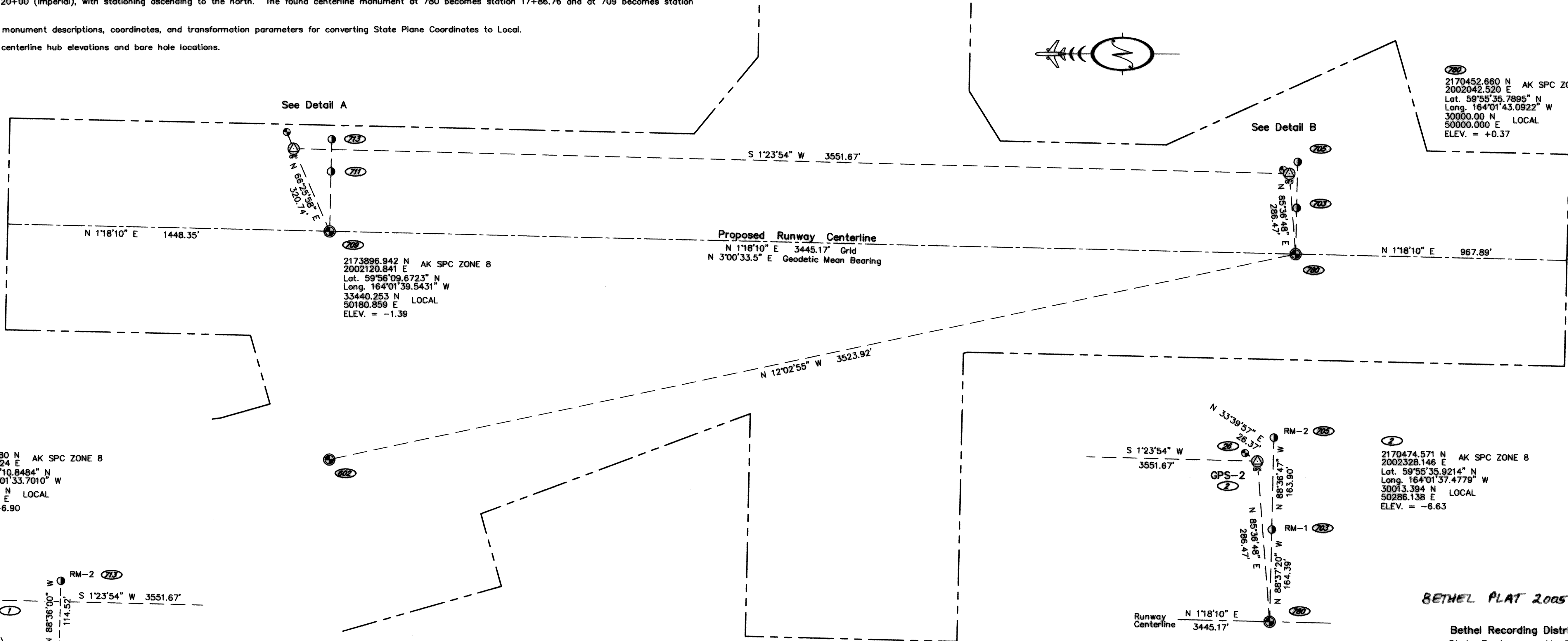
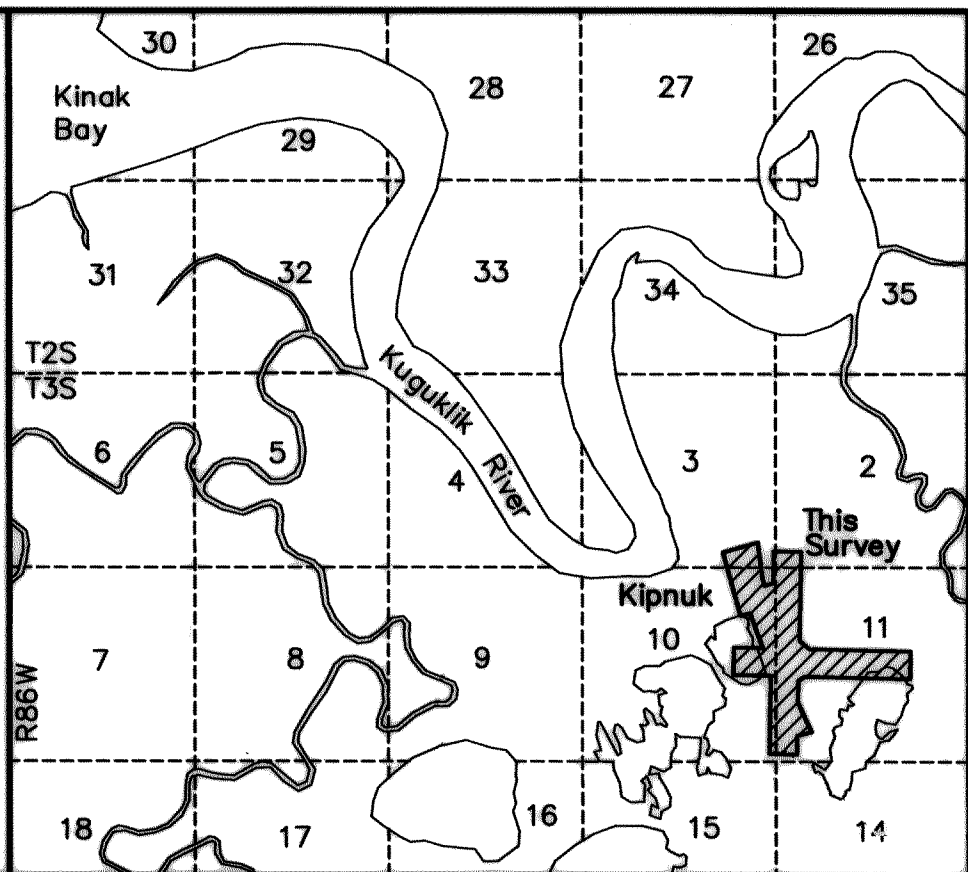
VICINITY MAP

Unsurveyed Sections
2, 3, 10 and 11, in
Township 3 South,
Range 86 West
Seward Meridian

U.S.G.S.
Kuskokwim Bay
(D-6), ALASKA

Bethel
Recording District

SCALE: 1" = 1 Mile



1
2174025.180 N AK SPC ZONE 8
2002414.824 E
Lat. 59°56'10.8484" N
Long. 164°01'33.7010" W
33559.673 N LOCAL
50478.516 E
ELEV. = -6.90

2
2170474.571 N AK SPC ZONE 8
2002328.146 E
Lat. 59°55'35.9214" N
Long. 164°01'37.4779" W
30013.394 N LOCAL
50286.138 E
ELEV. = -6.63

BETHEL PLAT 2005-5

Bethel Recording District
State Business - No Fee
This survey does not constitute a subdivision
as defined by AS 40.15.900

SURVEYOR CERTIFICATE

I hereby certify that I am properly Registered and
Licensed to practice Land Surveying in the State
of Alaska, and that this drawing represents a
survey made by me or under my direct supervision,
and that the monuments shown hereon actually exist
as described, and that all dimensions and other
details are correct to the extent shown hereon.

FEB 17, 2005

LS 10161

Date Registration Number

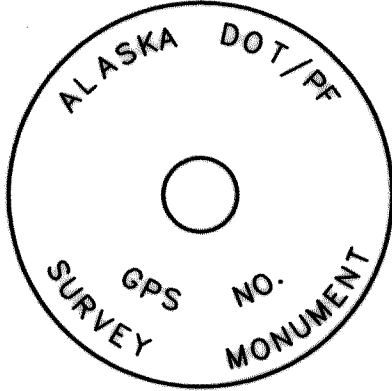
Douglas F. Popham

Registered Land Surveyor

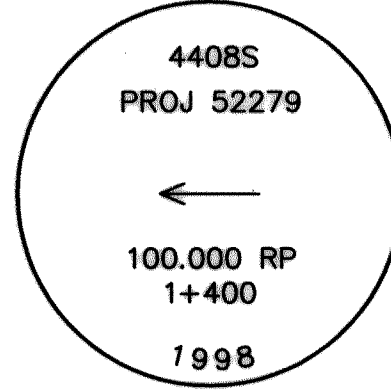


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES
Survey Control Diagram
Record Of Survey
AKSAS Project No.57796
Kipnuk Airport
Within Sections 2, 3, 10 and 11, T.3S. R.86W. S.M. AK.

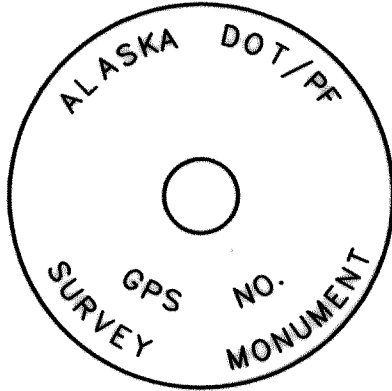
DRAWN	DFP	DATE	1/12/2005	SCALE	1"=200'
CHECKED	GK	DATE	1/12/2005	SHEET	1 OF 2



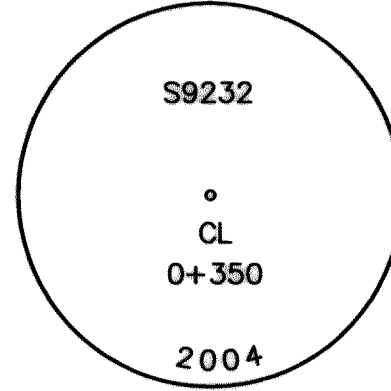
Pt. No. 1 GPS-1
Set 9/16"x40' Stainless
Steel sectional rod with
2 1/2" brass cap in 6"
PVC case with cover.
Carsonite Post bears
North 1.0'.



Pt. No. 705
Found 2" Alcap on a
5/8" Rebar projecting
0.3' above ground.
Good Condition.



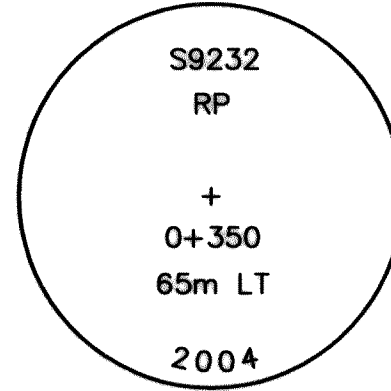
Pt. No. 2 GPS-2
Set 9/16"x24' Stainless
Steel sectional rod,
driven to refusal, with
2 1/2" brass cap in 6"
PVC case with cover.
Carsonite Post bears
North 1.0'.



Pt. No. 709
Found 2" Alcap on a
5/8" Rebar projecting
0.2' above ground.
Good Condition.



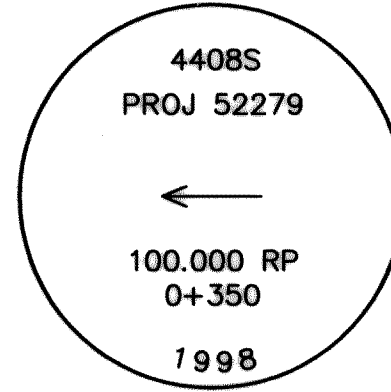
Pt. No. 11
Set 3 1/4" Alcap on
a 2 1/2" Aluminum
Post, 0.1' above
ground. Carsonite
Post bears North 1.0'.



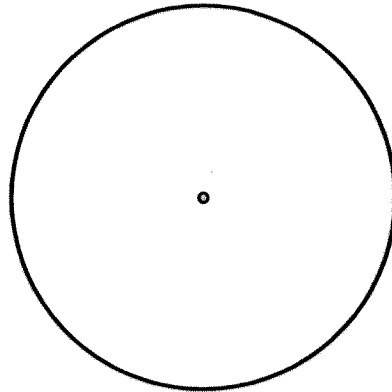
Pt. No. 711
Found 2" Alcap on a
5/8" Rebar projecting
0.2' above ground.
Good Condition.



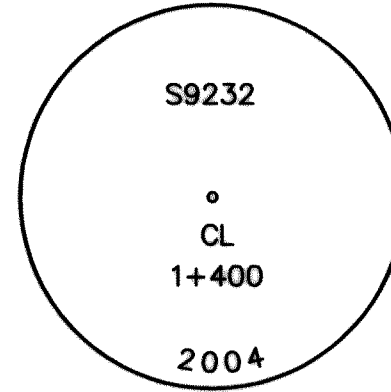
Pt. No. 26
Set 3 1/4" Alcap on
a 2 1/2" Aluminum
Post, 0.1' above
ground. Carsonite
Post bears North 1.0'.



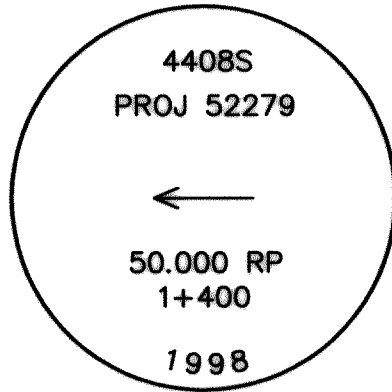
Pt. No. 713
Found 2" Alcap on a
5/8" Rebar projecting
0.6' above ground.
Bent, straightened,
shot ground.



Pt. No. 602
Found 1 1/2" Alcap
on a 5/8" Rebar.
Flush with ground and
no readable marks.
Good Condition. Used
as RTK base Point.
Held for horizontal
and vertical control.



Pt. No. 780
Found 2" Alcap on a
5/8" Rebar projecting
0.1' above ground.
Good Condition. Held
for horizontal control.



Pt. No. 703
Found 2" Alcap on a
5/8" Rebar projecting
0.5' above ground.
Bent, straightened,
shot ground.

HORIZONTAL AND VERTICAL CONTROL

Coordinate Table			Horizontal: NAD83 (CORS) State Plane AK-8		Vertical: NAVD88 Orthometric with GEOID99		
Point	Northing(ft)	Easting(ft)	Elevation(ft)	Monument Type	Description	Point Data Source	
1	2174025.180	2002414.824	-6.90	Set 9/16"x40" SS Rod w/ 2 1/2" Brass Cap	GPS-1	H: Static GPS V: Diff. Levels	
2	2170474.571	2002328.146	-6.63	Set 9/16"x24" SS Rod w/ 2 1/2" Brass Cap	GPS-2	H: Static GPS V: Diff. Levels	
11	2174049.677	2002474.240	-6.92	Set 3 1/4" Alcap on 2 1/2" Al Post	RM to GPS-1	H: Static GPS V: Diff. Levels	
26	2170496.521	2002342.766	-6.02	Set 3 1/4" Alcap on 2 1/2" Al Post	RM to GPS-2	H: Static GPS V: Diff. Levels	

RECOVERED CORNERS

Point	Northing(ft)	Easting(ft)	Elevation(ft)	Monument Type	Description	Point Data Source
602	2173898.950	2001306.930	-7.56	Found 1 1/2" Alcap on 5/8" Rebar	Existing RY Cl Monument DOT Pt 602	H: OPUS, USKH V: OPUS, USKH
703	2170448.707	2002206.866		Found 2" Alcap on 5/8" Rebar	RM1 CL Monument 1+400 (m)	H: Static GPS
705	2170444.740	2002370.715	-6.54	Found 2" Alcap on 5/8" Rebar	RM2 CL Monument 1+400 (m)	H: Static GPS V: Static GPS
709	2173896.942	2002120.841	-1.39	Found 2" Alcap on 5/8" Rebar	Cl Monument 0+350 (m)	H: Static GPS V: Diff. Levels
711	2173892.044	2002334.056	-10.31	Found 2" Alcap on 5/8" Rebar	RM1 CL Monument 0+350 (m)	H: Static GPS V: Static GPS
713	2173889.246	2002448.542		Found 2" Alcap on 5/8" Rebar	RM2 CL Monument 0+350 (m)	H: Static GPS
780	2170452.660	2002042.520	0.37	Found 2" Alcap on 5/8" Rebar	CL Monument 1+400 (m) DOT Pt 80	H: OPUS, USKH V: Diff. Levels

Notes

USKH OPUS values for point 602 and the horizontal value for point 780 were held for primary control.

The record elevation for point 780 of 0.26' was held during processing. Differential levels show that elevation to now be +0.37'.

Points with values noted "Static GPS" were processed by MLA using Topcon Tools v1.20 post processing software.

Elevations were derived from a level loop starting at point 602 with an elevation of -7.56 feet.

Elevations for secondary CL monuments are Static GPS only. Monuments were 2" Alcaps on 5/8" rebar and were somewhat loose.

Transformation Parameters

Conversion from State Plane, Zone 8, NAD83(CORS96 EPOCH 2002) feet to local feet:

1. Scale State Plane Coordinates using .9999511560
2. Translate resulting coordinates using -2,140,346.6464 N -1,951,944.7322 E
3. Rotate resulting coordinates around Pt. 780, (South R/Y CL Mon 1+400) by 1°42'24" (CW)

Conversion from local feet to State Plane, Zone 8, NAD83(CORS96 EPOCH 2002) feet:

1. Rotate coordinates around Pt. 780, (South R/Y CL Mon 1+400) by $-1^{\circ}42'24''$ (CCW)
2. Translate resulting coordinates using +2,140,346.6464 N +1,951,944.7322 E
3. Scale resulting coordinates using 1.0000488464

Coordinate Table		Local Coordinates
Point	Northing(ft)	Easting(ft)
1	33559.673	50478.516
2	30013.394	50286.138
11	33582.388	50538.633
26	30034.898	50301.404
602	33466.500	49367.409
703	29891.155	50164.147
705	29982.310	50327.798
709	33440.253	50180.859
711	33429.008	50393.823
713	33422.802	50508.169
780	30000.000	50000.000

2005-5

BETHEL REC DIST No
02 K 2

DATE 2-23, 2005

TIME 9:53 A.M.

Requested by AS/DOT-FC

Address _____

Bethel Recording District
State Business – No Fee
This survey does not constitute a subdivision
as defined by AS 40.15.900



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES
Survey Control Diagram
Record Of Survey
AKSAS Project No.57796
Kipnuk Airport

Within Sections 2, 3, 10 and 11, T.3S. R.86W. S.M. AK.

DRAWN	DFP	DATE	1/12/2005	SCALE	
CHECKED	GK	DATE	1/12/2005	SHEET	2 OF 2