

HORIZONTAL CONTROL POINTS - THIS SHEET

Point	Northing	Easting	Elevation	Description
1	211798.3655	316921.8189		Set Rbr/PC: TS PH-1
2	213132.2893	316570.0644		Set Rbr/PC: TS PH-2
3	214524.8588	316286.5197		Set Rbr/PC: TS PH-3
4	216069.3251	315892.0615		Set Rbr/PC: TS PH-4
5	217711.6178	315512.3687		Set Rbr/PC: TS PH-5
6	219147.8866	315214.5897		Set Rbr/PC: TS PH-6
101	205221.0302	319829.0610		Set Rbr/PC: TS-101
102	206111.1073	319179.2659		Set Rbr/PC: TS-102
103	207675.5750	318268.1720		Set Rbr/PC: TS-103
104	209034.2950	317534.5200		Set Rbr/PC: TS-104
105	209892.6929	317311.6327		Set Rbr/PC: TS-105
500	208449.6508	319017.6054		Fd BC: Sta Z22A
501	206580.8337	320162.6705		Set Steel Rod/BC: Sta Z22A AZ

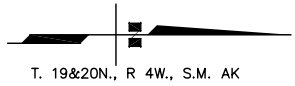
VERTICAL CONTROL POINTS - THIS SHEET

Point	Northing	Easting	Elevation	Description
701	211226	317110	161.985	USC&GS BM E104
702	213368	316548	162.575	USC&GS BM F104
703	216100	315816	155.508	TBM PH-72.0: RR Spike in 8" Poplar
704	219108	315321	191.376	DOT BM G104 Reset 2002

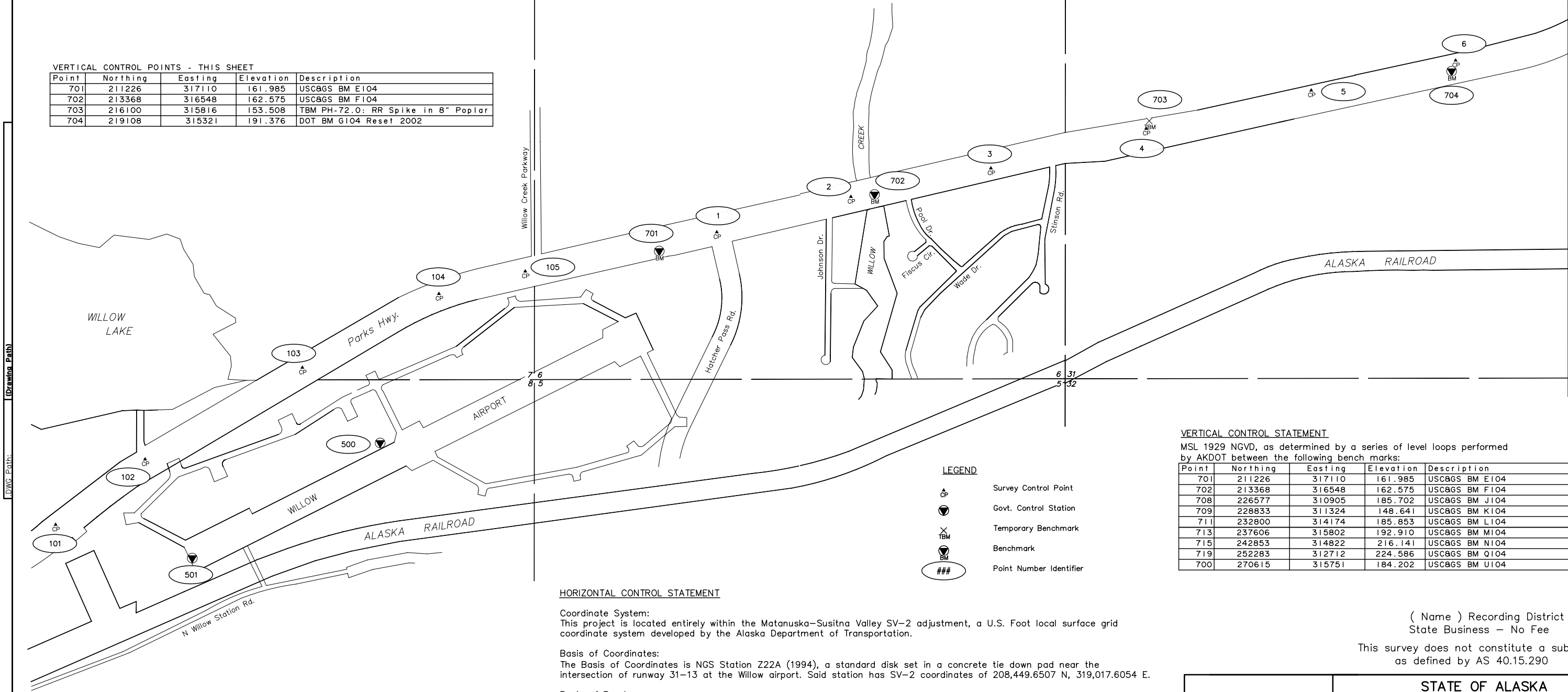
NOTES:

- 1) Horizontal control points 500-509 were established by AKDOT by using networked static GPS control.
- 2) All intermediate control points (101-105, 1-52) were established by AKDOT using conventional traverse techniques with a Leica TCRA 1101plus Total Station instrument. This traverse was then constrained to the GPS control points using a least squares adjustment.
- 3) All background information shown herein was obtained from Matanuska-Susitna Borough Geographic Information System Mapping, and is for orientation purposes only.
- 4) All dimensions and coordinates shown are in U.S. Survey Feet unless otherwise noted.
- 5) This survey was completed during July-August 2002.

R. 5 W.
R. 4 W.



U.S. SURVEY FEET



VERTICAL CONTROL STATEMENT

MSL 1929 NGVD, as determined by a series of level loops performed by AKDOT between the following bench marks:

Point	Northing	Easting	Elevation	Description
701	211226	317110	161.985	USC&GS BM E104
702	213368	316548	162.575	USC&GS BM F104
708	226577	310905	185.702	USC&GS BM J104
709	228833	311324	148.641	USC&GS BM K104
711	232800	314174	185.853	USC&GS BM L104
713	237606	315802	192.910	USC&GS BM M104
715	242853	314822	216.141	USC&GS BM N104
719	252283	312712	224.586	USC&GS BM Q104
700	270615	315751	184.202	USC&GS BM U104

HORIZONTAL CONTROL STATEMENT

Coordinate System:
This project is located entirely within the Matanuska-Susitna Valley SV-2 adjustment, a U.S. Foot local surface grid coordinate system developed by the Alaska Department of Transportation.

Basis of Coordinates:
The Basis of Coordinates is NGS Station Z22A (1994), a standard disk set in a concrete tie down pad near the intersection of runway 31-13 at the Willow airport. Said station has SV-2 coordinates of 208,449.6507 N, 319,017.6054 E.

Basis of Bearings:
The Basis of Bearings is a local plane bearing between NGS Station Z22A (1994) and AKDOTPF Station GPS U-104 (1965). AKDOTPF Station GPS U-104 (1965), a standard NGS brass disc cemented in the Northeast curb at the Northwest end of the Kashwitna River bridge, bears N 03° 00' 29.5" W a distance of 62,251.48 U.S. Feet from NGS Station Z22A. AKDOTPF Station GPS U-104 (1965) has SV-2 coordinates of 270,615.3475 N, 315,750.7317 E.

Translation Parameters:
To convert the local coordinates to NAD83 (92) State Plane U.S. Foot coordinates, translate using +2,624,987.4039 N, +1,312,507.1407 E, and scale using 0.9998907818.

Surveyor's 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.

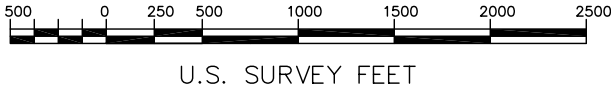
(Surv Name) (Surv Number) (Date)

(Name) Recording District
State Business - No Fee

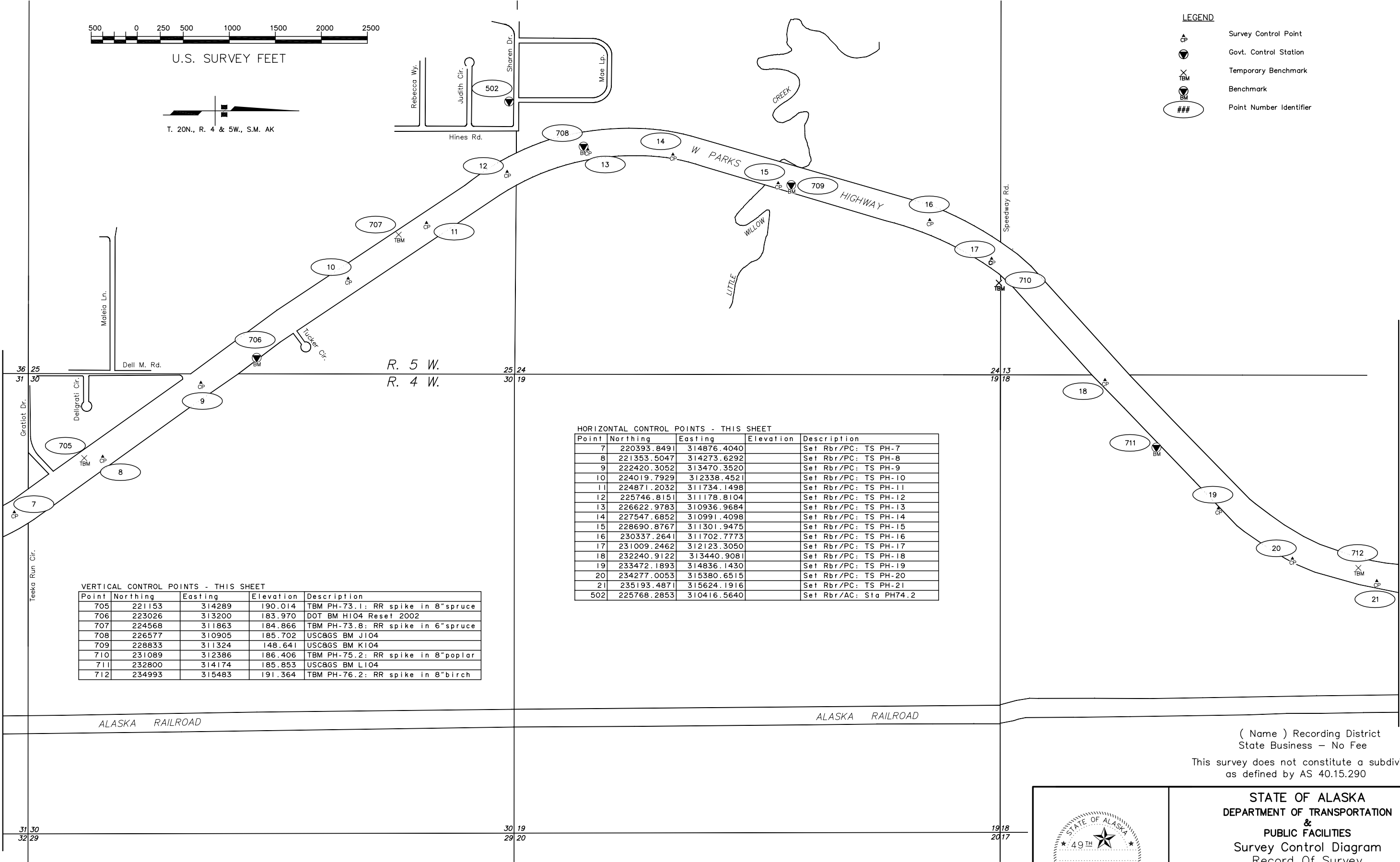
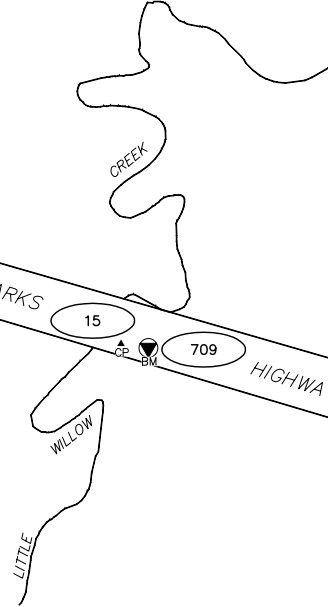
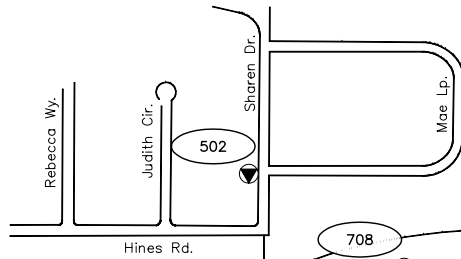
This survey does not constitute a subdivision
as defined by AS 40.15.290



STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES Survey Control Diagram Record Of Survey (Federal Project No.) (Project Name)			
WITHIN T. 19 N., R. 4 W. : T. 20 N., R. 4 & 5 W. & T. 21 N., R. 4 W. S.M. AK			
DRAWN	RMK	DATE	10/22/2002
CHECKED	MHS	DATE	10/30/2002
SCALE		1"=500'	
SHEET		1 OF 5	



- LEGEND**
- Survey Control Point
 - Govt. Control Station
 - Temporary Benchmark
 - Benchmark
 - Point Number Identifier



VERTICAL CONTROL POINTS - THIS SHEET				
Point	Northing	Easting	Elevation	Description
705	221153	314289	190.014	TBM PH-73.1: RR spike in 8"spruce
706	223026	313200	183.970	DOT BM H104 Reset 2002
707	224568	311863	184.866	TBM PH-73.8: RR spike in 6"spruce
708	226577	310905	185.702	USC&GS BM J104
709	228833	311324	148.641	USC&GS BM K104
710	231089	312386	186.406	TBM PH-75.2: RR spike in 8"poplar
711	232800	314174	185.853	USC&GS BM L104
712	234993	315483	191.364	TBM PH-76.2: RR spike in 8"birch

HORIZONTAL CONTROL POINTS - THIS SHEET				
Point	Northing	Easting	Elevation	Description
7	220393.8491	314876.4040		Set Rbr/PC: TS PH-7
8	221353.5047	314273.6292		Set Rbr/PC: TS PH-8
9	222420.3052	313470.3520		Set Rbr/PC: TS PH-9
10	224019.7929	312338.4521		Set Rbr/PC: TS PH-10
11	224871.2032	311734.1498		Set Rbr/PC: TS PH-11
12	225746.8151	311178.8104		Set Rbr/PC: TS PH-12
13	226622.9783	310936.9684		Set Rbr/PC: TS PH-13
14	227547.6852	310991.4098		Set Rbr/PC: TS PH-14
15	228690.8767	311301.9475		Set Rbr/PC: TS PH-15
16	230337.2641	311702.7773		Set Rbr/PC: TS PH-16
17	231009.2462	312123.3050		Set Rbr/PC: TS PH-17
18	232240.9122	313440.9081		Set Rbr/PC: TS PH-18
19	233472.1893	314836.1430		Set Rbr/PC: TS PH-19
20	234277.0053	315380.6515		Set Rbr/PC: TS PH-20
21	235193.4871	315624.1916		Set Rbr/PC: TS PH-21
502	225768.2853	310416.5640		Set Rbr/AC: Sta PH74.2

NOTES:
Refer to Sheet 1 for Notes, Certificates, and Control Information.

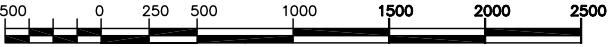
(Name) Recording District
State Business - No Fee
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STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES Survey Control Diagram Record Of Survey (Federal Project No.) (Project Name)			
WITHIN T. 19 N., R. 4 W. : T. 20N., R. 4&5W. & T. 21N., R. 4W. S.M. AK			
DRAWN	RMK	DATE	10/22/2002
CHECKED	MHS	DATE	10/30/2002
SCALE		1"=500'	
SHEET		2 OF 5	

HORIZONTAL CONTROL POINTS - THIS SHEET				
Point	Northing	Easting	Elevation	Description
22	237080.5572	315799.1989		Set Rbr/PC: TS PH-22
23	238247.3920	315934.2716		Set Rbr/PC: TS PH-23
24	239237.8374	315753.8578		Set Rbr/PC: TS PH-24
25	240415.9194	315475.7514		Set Rbr/PC: TS PH-25
26	241637.5951	315145.7444		Set Rbr/PC: TS PH-26
27	243049.9640	314854.9037		Set Rbr/PC: TS PH-27
28	244472.9341	314518.9803		Set Rbr/PC: TS PH-28
29	245582.2815	314223.4656		Set Rbr/PC: TS PH-29
30	247438.8956	313537.0559		Set Rbr/PC: TS PH-30
31	249435.6568	312798.3378		Set Rbr/PC: TS PH-31
503	241625.0471	313408.1028		Set Rbr/AC: Sta PH77.5

VERTICAL CONTROL POINTS - THIS SHEET				
Point	Northing	Easting	Elevation	Description
713	237606	315802	192.910	USC&GS BM M104
714	240339	315384	202.462	TBM PH-77.2: RR spike in 8"birch
715	242853	314822	216.141	USC&GS BM N104
716	244842	314306	232.685	TBM PH-78.1: RR spike in 6"birch
717	247058	313561	247.900	DOT BM P104 Reset 2002
718	249198	312795	225.186	TBM PH-79.0: RR spike in 14"birch

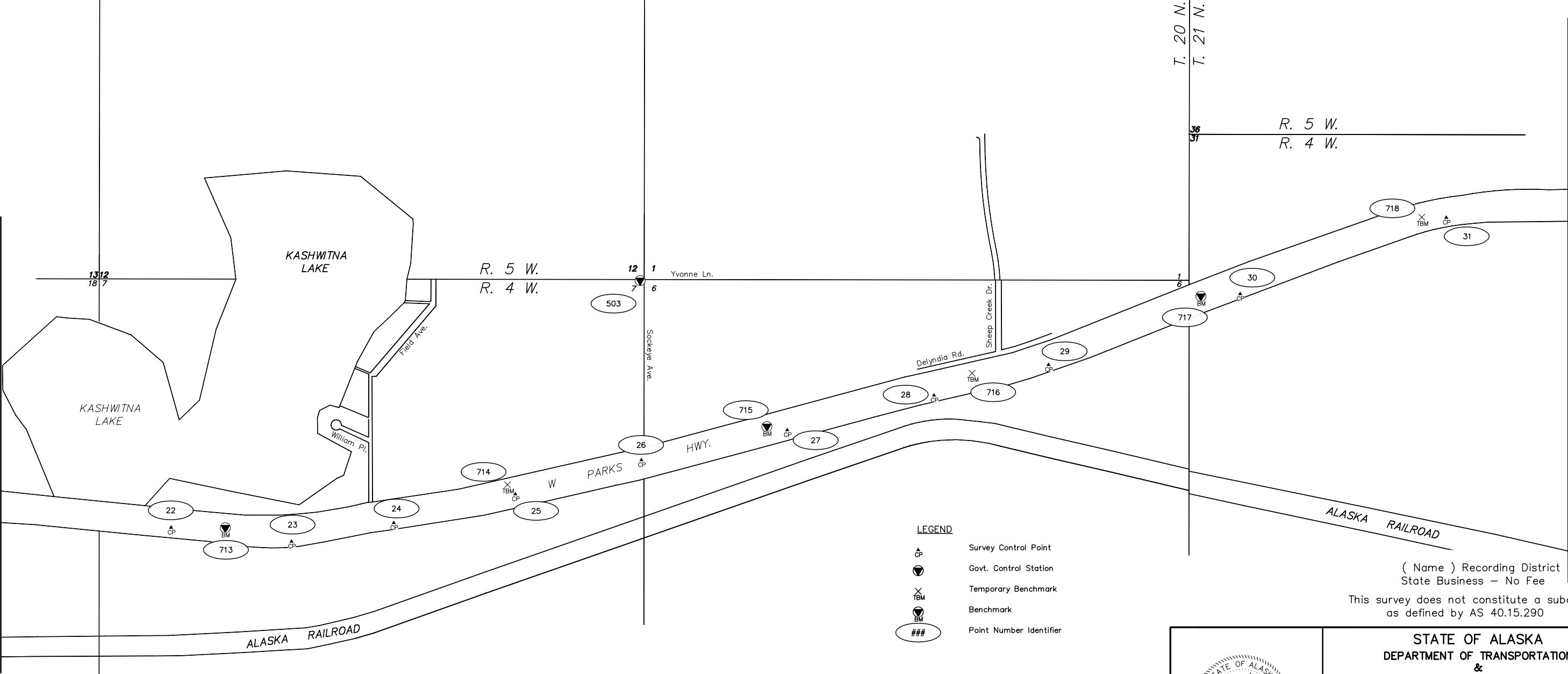


U.S. SURVEY FEET



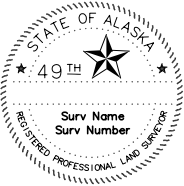
T. 20&21N., R. 4W., S.M. AK

DWG Path: (Drawing Path)



- LEGEND
- CP Survey Control Point
 - Govt. Control Station
 - Temporary Benchmark
 - Benchmark
 - Point Number Identifier

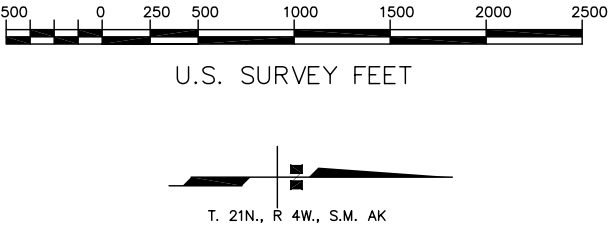
NOTES:
Refer to Sheet 1 for Notes, Certificates, and Control Information.



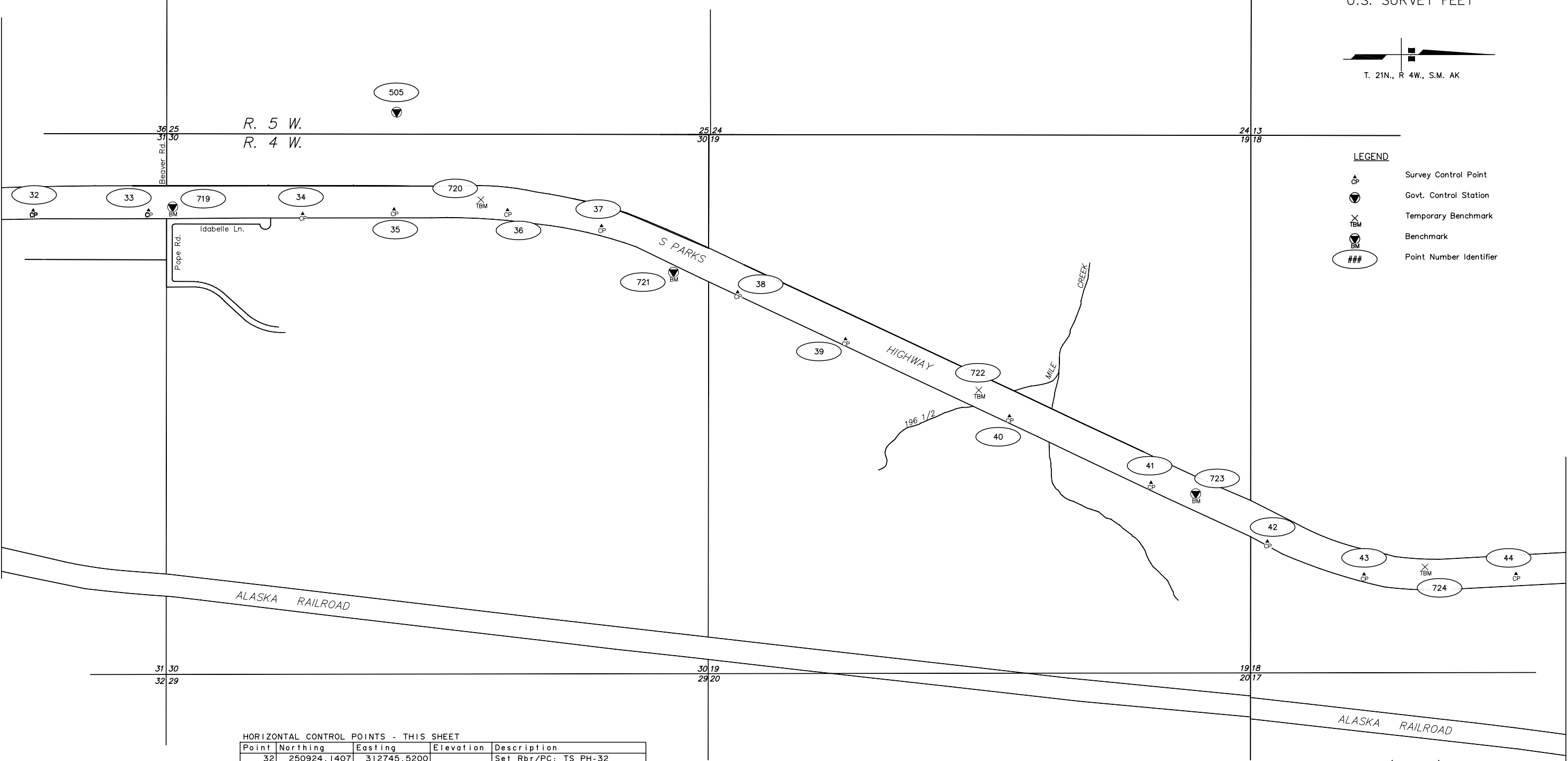
(Name) Recording District
State Business – No Fee
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STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES Survey Control Diagram Record Of Survey (Federal Project No.) (Project Name)			
WITHIN T. 19 N., R. 4W. : T.20N,R 4&5W. & T. 21N., R. 4W. S.M. AK			
DRAWN	RMK	DATE	10/22/2002
CHECKED	MHS	DATE	10/30/2002
SCALE		1"=500'	
SHEET		3 OF 5	

NOTES:
Refer to Sheet 1 for Notes, Certificates, and Control Information.



- LEGEND
- Survey Control Point
 - Govt. Control Station
 - Temporary Benchmark
 - Benchmark
 - Point Number Identifier



HORIZONTAL CONTROL POINTS - THIS SHEET				
Point	Northing	Easting	Elevation	Description
32	250924.1407	312745.5200		Set Rbr/PC: TS PH-32
33	252047.5120	312744.5843		Set Rbr/PC: TS PH-33
34	253548.4669	312778.4484		Set Rbr/PC: TS PH-34
35	254439.1914	312734.7097		Set Rbr/PC: TS PH-35
36	255544.0216	312742.0910		Set Rbr/PC: TS PH-36
37	256459.2000	312897.5348		Set Rbr/PC: TS PH-37
38	257784.8081	313541.2837		Set Rbr/PC: TS PH-38
39	258835.3098	313999.4116		Set Rbr/PC: TS PH-39
40	260431.8607	314748.6383		Set Rbr/PC: TS PH-40
41	261810.5924	315397.1774		Set Rbr/PC: TS PH-41
42	262944.2364	315969.5135		Set Rbr/PC: TS PH-42
43	263885.4150	316289.5904		Set Rbr/PC: TS PH-43
44	265365.1035	316284.9974		Set Rbr/PC: TS PH-44
505	254463.9714	311788.9399		Set Rbr/AC: Sta PH80.0

VERTICAL CONTROL POINTS - THIS SHEET				
Point	Northing	Easting	Elevation	Description
719	252283	312712	224.586	USCBGS BM Q104
720	255284	312642	197.678	TBM PH-80.2: RR spike in 10"birch
721	257161	313348	190.872	DOT BM R104 Reset 2002
722	260134	314496	163.173	TBM PH-81.2: RR spike in 6" poplar
723	262246	315505	189.888	DOT BM S104 Reset 2002
724	264479	316218	200.010	TBM PH-82.0: RR spike in 12"birch

(Name) Recording District
State Business – No Fee
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES
Survey Control Diagram
Record Of Survey
(Federal Project No.)
(Project Name)

DRAWN RMK
CHECKED MHS

DATE 10/22/2002
DATE 10/30/2002

SCALE 1"=500'
SHEET 4 OF 5

DWG Path: Drawing Path

NOTES:

Refer to Sheet 1 for Notes, Certificates, and Control Information.

HORIZONTAL CONTROL POINTS - THIS SHEET

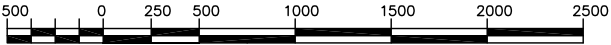
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45	266663.4145	316200.0802		Set Rbr/PC: TS PH-45
46	267694.6310	316198.0480		Set Rbr/PC: TS PH-46
47	268916.0626	316152.2935		Set Rbr/PC: TS PH-47
48	269555.2993	316099.5572		Set Rbr/PC: TS PH-48
49	270410.8612	315848.3189		Set Rbr/PC: TS PH-49
50	272547.5017	315018.6311		Set Rbr/PC: TS PH-50
51	273183.3655	315003.7226		Set Rbr/PC: TS PH-51
52	273732.9083	315167.3986		Set Rbr/PC: TS PH-52
506	266672.3018	315058.8951		Set Rbr/AC: Sta PH82.5
508	274624.9813	315825.3938		Set Rbr/AC: Sta PH84.1
509	276828.7590	317769.4111		Set Rbr/AC: Sta PH84.6

LEGEND

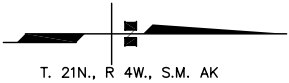
- Survey Control Point
- Govt. Control Station
- Temporary Benchmark
- Benchmark
- Point Number Identifier

VERTICAL CONTROL POINTS - THIS SHEET

Point	Northing	Easting	Elevation	Description
700	270615	315751	184.202	Fd BC: USCGS BM U104
725	266884	316108	203.179	DOT BM T104 Reset 2002
727	272976	314920	201.699	TBM PH-83.7: RR spike in 12"birch



U.S. SURVEY FEET



(Name) Recording District
State Business – No Fee

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES
Survey Control Diagram
Record Of Survey
(Federal Project No.)

(Project Name)

WITHIN T. 19 N., R. 4 W. : T.20N.,R. 4&5W. & T. 21N., R. 4W. S.M. AK

DRAWN	RMK	DATE	10/22/2002	SCALE	1"=500'
CHECKED	MHS	DATE	10/30/2002	SHEET	5 OF 5